Success and Failure of Firms in the IT Outsourcing Industry

by

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ABSTRACT

In the year 2004 amidst the hype against outsourcing heard in the wake of elections something important happened: the first few IT outsourcing companies crossed the threshold of billion dollars in revenue (viz. TCS, Infosys, Wipro).

Although there has been much attention given to the outsourcing and the models of IT outsourcing, not much has been heard on the actual players and their dynamics. The primary objective of this thesis is to explore the outlook and behavior of the IT outsourcing companies, the factors driving their growth, their business and marketing strategies, threats from competition, and limitations to growth.

I have tried to study the factors to which the success and failure of IT firms can be attributed. For the ease of study, I have categorized them under Marketing, Strategy and Organizational factors.

Case studies have been developed to present the happenings of the business, its key players, project scenarios, milestones, organizational structures etc. and relevant data in a narrative fashion, which then is laid open to exploration and further investigation using a variety of tools. The approach of system dynamics meshes well with the case study method as in essence it tries to model the real world descriptively. I have used system dynamics to study the inter-relations between the various factors in play.

The end objective of this study is to deliver a set of recommendations and frameworks for success and failure in the IT outsourcing space, which can be used as recommendations for:

- Existing players in the IT outsourcing space
- New entrants to the IT outsourcing industry
- Employees working in IT outsourcing companies
- HR and Project Managers of IT outsourcing companies.

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1.1 Background

The IT outsourcing industry has come into the limelight post Y2K and post 911 with major corporations taking a hard look at this business option to reduce costs streamline operations and raise profitability in this era of globalization.

There has been public outrage against outsourcing companies taking away jobs from the American public and the subject has been taken up in discussion forums and government. In recent years, almost all the major American business schools, from Kellogg to Stern, Tuck, Cornell, Berkeley, Stanford and Harvard have put outsourcing and India on their teaching itinerary.

The Global Delivery Model followed by IT outsourcing companies is reaching maturity, it being recognized as a viable business option and vendors from countries such as India, China, Russia, Philipines, Canada, Ireland etc. joining in.

There is also a spurt of allied services such as IT enabled services as companies try to uncover new niche markets for outsourcing. Incumbents in the business are trying to go up the value chain by providing value-add solutions such as system integration, process management and process re-engineering in the form of business process outsourcing.

This particular year has seen the fortune of IT outsourcing shine in the NASDAQ (e.g. CTSH being initiated into the NASDAQ100 for the first time). However, not all IT outsourcing firms are doing the same things. There is great breadth in strength, quality and capabilities of these vendors.

This thesis attempts to take a look at the factors that call for the success and failure of IT outsourcing firms grouping them under marketing, strategy and organizational factors. System dynamics has been used to identify the relationships that exist between the factors causative of rise or fall of these firms. The end objective is to derive generic insights and recommendations for the IT outsourcing firms.

1.2 Approach

The approach for this thesis will be the development of two case studies on two IT companies in the outsourcing space. I will contrast their marketing, strategy and organizational issues through the analysis of these case studies via the methods of System Dynamics.

1.2.1 Methodology

The methodology was to gather data for the case studies based on these sources

- Reports of premier research firms
- Class presentations by industry speakers on outsourcing
- Interviews with employees from the IT Outsourcing industry
- Author's personal experience in the IT Outsourcing Industry.

System Dynamics was then used to identify the major variables and inter-relations in these case studies to show their inter-play.

1.2.2 Structure of Thesis

This thesis studies the dynamics inherent in the IT outsourcing companies.

Chapter 2 builds up the case with definitions, classifications and description of the IT outsourcing landscape.

Chapter 3 is a case study on the marketing and strategy aspects in an IT outsourcing company. It builds up the various variables which create the marketing and strategy dynamics in an IT outsourcing company.

Chapter 4 is a case study on the organizational aspects in an IT outsourcing industry. It is a follow up from the first case study and unravels the remaining aspects in the day to day life at an IT outsourcing company.

In Chapter 5 we use the standard method of System Dynamics to analyze the cases developed in the last two chapters. Insights and recommendations are recorded.

2. THE IT OUTSOURCING LANDSCAPE

"We have to outsource to remain competitive. It is as simple as that."
-Vice President, a global insurance company.

2.1 Adoption and Growth of IT Outsourcing Firms

We can study the growth of IT Offshoring firms dividing them into three time periods.

Pre-Y2k

Although there were a steady trickle of companies in the business of IT outsourcing and offshoring since 1970, they were yet to gather critical mass. The year 2000 with its urgency to fight the Y2K bug set the ball rolling for the offshore delivery model, as a cost effective and efficient manner to fix the bug.

Internet Era

Post Y2K the IT outsourcing companies managed to grow at a rapid rate thanks to the Internet boom.

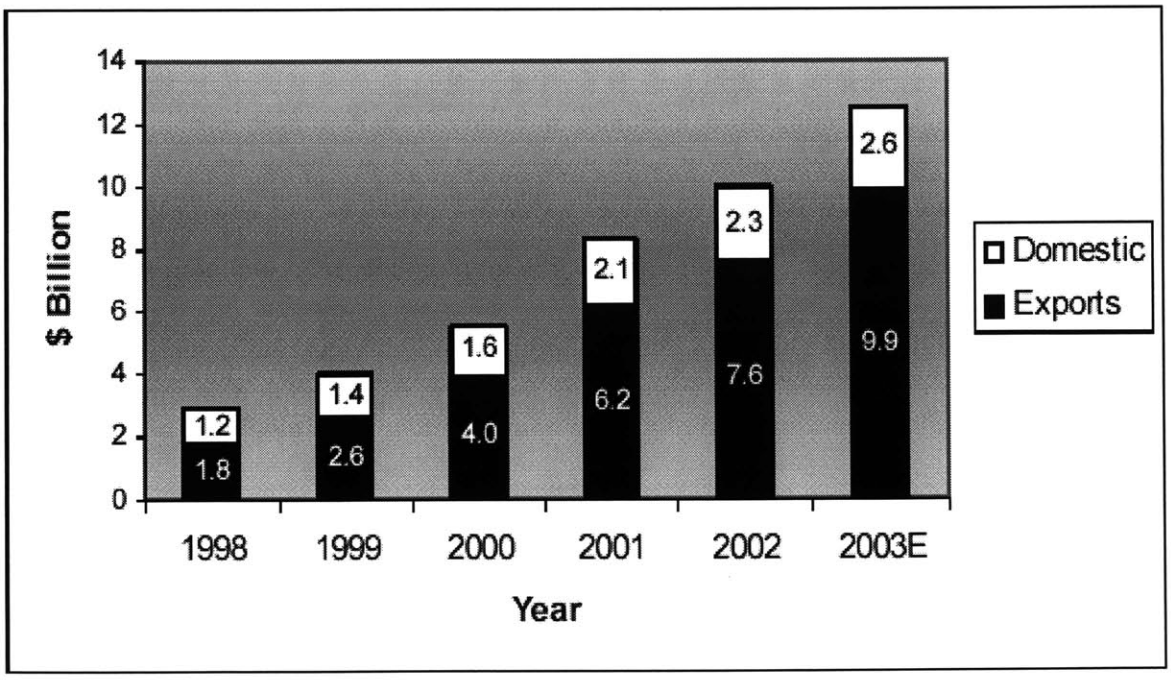


Figure 2. 1 Growth of IT Software and Services Sector in India

Post 911

When the Internet boom began going bust around 2002 resulting in a subsequent economic downturn in the U.S, outsourcing and offshoring came into the limelight as a major source of cost savings. These cost savings were to be brought about primarily by two ways, offshoring providing a comparative cost advantage of work being executed in 'cheap-labor' countries, and outsourcing in general bringing about streamlining of a company's operations allowing the company to focus on its core competencies. Peterson's clients experienced 25-40% of savings by outsourcing and offshoring.[i]

Arrival of MNCs in India (2001)

Spurred by the success of IT off shoring companies and unable to bear the price war any other way, MNC companies such as IBM, Accenture, and CGEY open shop in India.

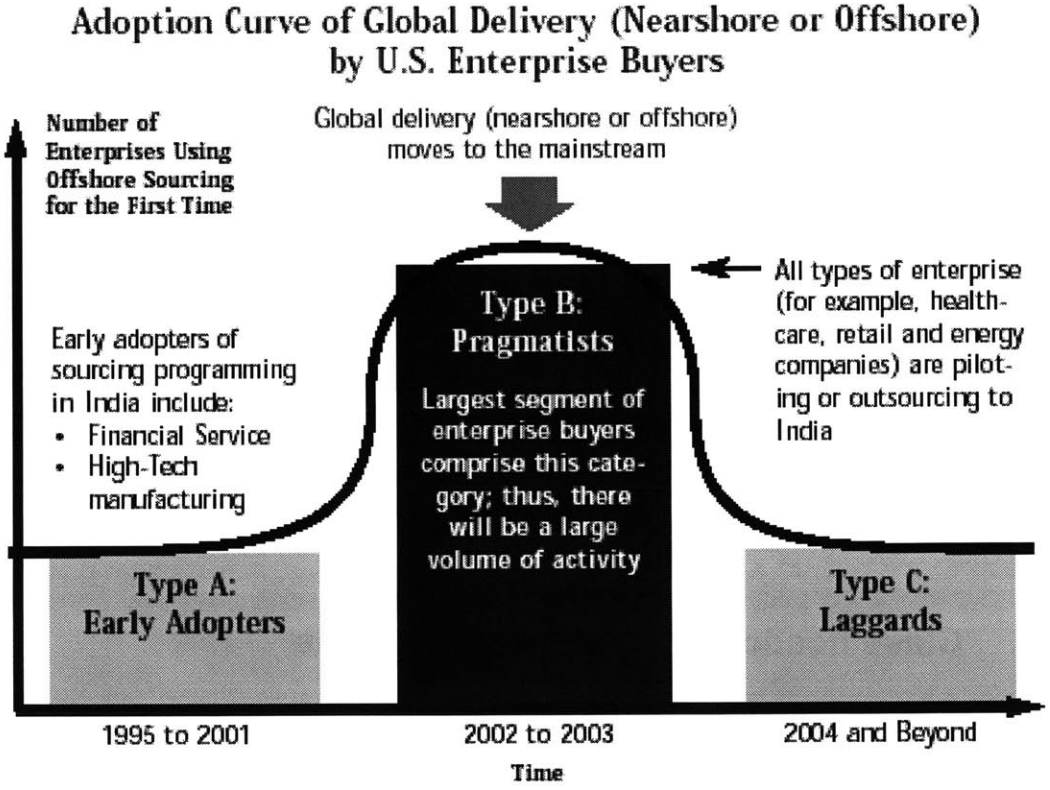


Figure 2.2 Adoption Curve of Global Delivery

Applying the classical Bell curve to the IT outsourcing industry we have

Early Adopters

Large corporate firms such as GE, Citibank, AIG with large IT facilities and maintenance costs.

Pragmatists

Medium sized firms which joined the IT outsourcing wave post Y2k. Bank of America would be a good example. Product companies such as Informatica, Juniper, Cisco and services companies such as Verizon would be other examples.

Laggards

These have been either boutique firms or monopolies which haven't felt the heat of outsourcing or have taken up outsourcing in a big way after they woke up to the competition. Companies which are still considering the outsourcing option would be good examples.

2.2 Classification of IT outsourcing firms

Firstly, we have the traditional players in the IT Outsourcing space are IBM, CGEY, Accenture, Deloitte, EDS etc. who have been providing IT consulting services to mostly North American clients traditionally.

Secondly, we have the pure offshore-based players who have business operations at client sites **(Offshore Outsourcing)** and yet manage the majority of their work offshore. GE and Citibank were the first major clients for this kind of outsourcing to vendors in India such as TCS, Satyam etc.

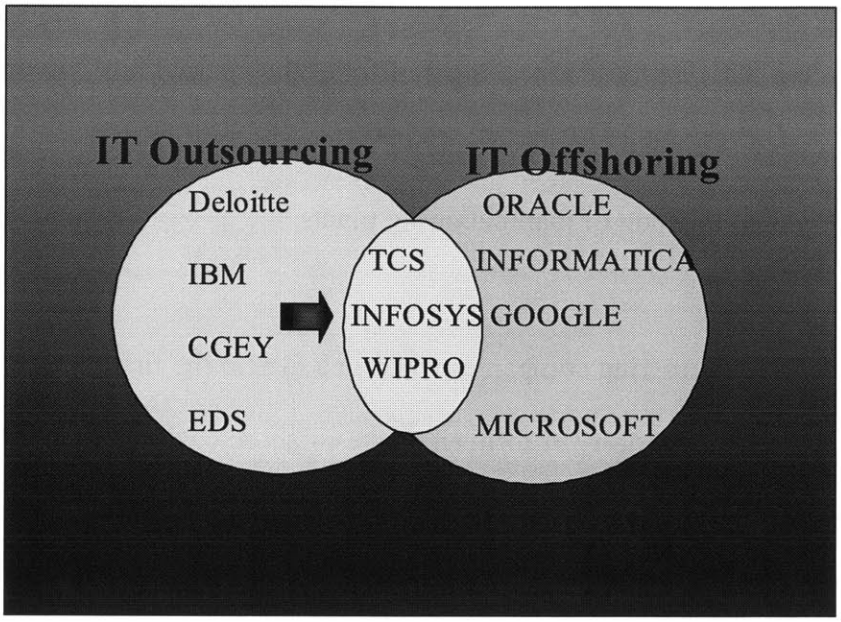


Figure 2. 3 Classification of Outsourcing companies

There is a constant migration from the provider firms in the first category to the second. In short, of all outsourcing players off shoring is a 'must-have' desired strategy because clients want truly global players for the potential to reduce costs by off shoring to other countries, for the ability to outsource global operations to the different arms of the same vendor bringing about greater unity.

Thirdly we have companies that open offshore branches **(Offshore Ownership)** where a significant part of the offshore model relates to the transfer of an internal function or department, e.g. software development, IT applications maintenance or a call center, to an

offshore location. The main practitioners of this form of Offshore are large, multinational companies (e.g. GE). In these cases, the transfer of the internal function or department to an offshore location is guided by considerations such as cost and efficiency, similar to those guiding the global location of manufacturing plants.

Fourthly we have partnering companies wherein a firm in the first category partners with a company in the third category to form an onsite-offshore coalition (e.g., Deloitte&Mastek. CSC & Perot).

Another way to categorize IT outsourcing companies would be to discern them on the basis of ones which are doing pure IT outsourcing as compared to more system and process level work such as system integrators, Business Process Outsourcing, Business Process Re-engineering and Business Process Management.

This can also be represented as a matrix.

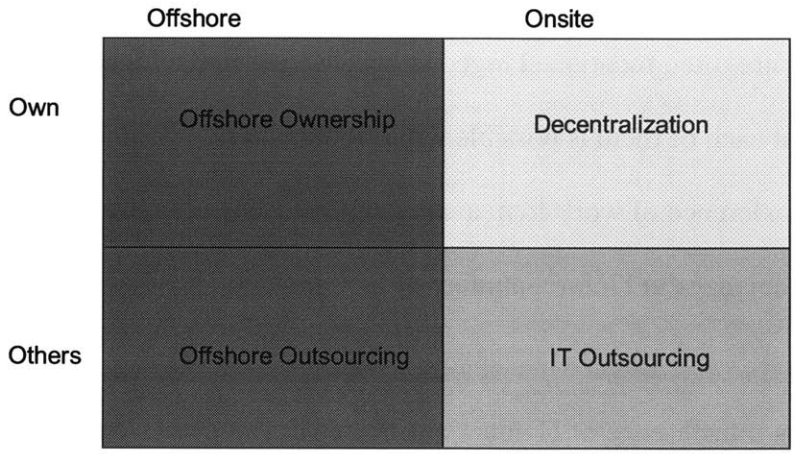


Figure 2. 4 Offshoring/Outsourcing Matrix

On the bottom left quadrant we have companies that outsource to offshoring vendors e.g. AIG offshoring to TCS.

On the top left quadrant we have companies which have opened up their offshore centers such as GE, GOOGLE, ORACLE etc.

On the bottom right quadrant we have companies outsourcing to onsite vendors e.g. Bank of America outsourcing their IT governance to Ernst & Young.

On the top right quadrant we have companies decentralizing their operations within the same country to classify work by geography or to better utilize the strengths in geographical and socio-political diversity within a country e.g. IBM opening up offices in Atlanta to tap the huge call-center business already existing there.

2.3 Definitions related to IT Outsourcing

IT outsourcing and offshoring are often mentioned together because we find a high degree of overlap between the two but each of them is possible without the other.

IT **outsourcing** means the transference of work from a company whose core competence is not IT to a company which specializes in IT for a number of factors which are discussed later in this chapter.

IT **offshoring** generally means transference of IT functions from a developed G-7 nations to low-cost, developing countries either by outsourcing work to vendors operating in those countries or by opening shop there.

ITES refers to IT enabled services such as call centers.

Business Process Outsourcing (BPO) means that a third-party service provider takes on the running of an entire business process, rather than just the IT systems that underpin it, such as: human resources; supply chain management; accounts payable and accounts receivables operations; mailroom management; call center operations; electronic toll collection; image archival and retrieval solutions; loan origination/servicing; telemarketing and telesales; trade marketing functions; claims administration; order entry, and tracking and document management. Allied concepts are Business Process Re-engineering (BPR) and Business Process Management (BPM) which are related to outsource process and management ideas from a services vendor and not just IT services.

Human Resources Outsourcing:

HR outsourcing companies specialize in providing back office support services, whereby they take responsibility for all non-strategic staff in the division, and manage functions such as staff training, recruitment administration, employee benefits and information services, with the aim of improving efficiency and reducing costs by aggregation of these tasks across several companies bringing about volumes of scale and streamlining processes through business process reorganization. This is innately tied up with IT outsourcing as the service provider takes on the client's main HR software programs.

Near shoring is the ability to have centers near the client site. This was a concept that developed chiefly to mitigate risks in offshoring arising due to distance of the vendor from the client and environmental risks such as inclement weather. The need to satisfy immediate and emergency requests at the client site may not be possible from a remote offshore location. For example, IT offshoring companies from India have nearshore facilities in US to handle requirements which can not be dealt with from offshore effectively. For example, Canada is a nearshore for many offshoring companies because of its proximity to US and at the same time having lower labor rates than US.

Transformational Outsourcing is a more systemic approach to IT outsourcing in which large service providers take responsibility for the entire business-critical operations (for example the claims settlement process of an insurance firm with an objective of reducing claim cycle time) of the client with an objective of providing cost-savings and higher business efficiencies by taking several small projects into one big umbrella contract. In

essence, it aims towards generating value in outsourcing just not just by cost savings but also by generating higher operational efficiencies.

Multi-sourcing refers to the practice of contracts being awarded on a best-of-breed consortium basis to a large number of service providers each being made to bid for a project or a contract and then working together each drawing on its particular areas of expertise. An example would be a large corporation like GE dividing up its IT applications into various small projects and then bidding them to separate vendors according to capability and resource matching.

Utility/on-demand computing is a concept where services vendors deliver applications, computing power, storage, databases, network access on a pay-per-use basis.
Example: IBM Global Services and HP Services.

2.4 Drivers for IT outsourcing/Offshoring

- **Difficult economic conditions in the U.S and an existing labor rate arbitrage in Offshoring(Cost Advantage)**

Silicon Valley's top venture capitalists are pushing hard for technology startups to use offshore workers to lower costs. Offshore labor cost savings are so significant that many startup CEOs now include an offshoring component in the business plans they pitch to venture capitalists. Interviews with executives from Silicon Valley startups that received venture funding found that offshoring results in savings in the range of 0 to 50 percent. [ii]

The severe downturn that hit the US economy after the Internet bubble burst led to a serious focus on cost-cutting measures in companies. Outsourcing to vendors from other countries where labor rate arbitrages exist became a lucrative option. To remain profitable and retain competitive advantage, companies are focusing on their core competencies giving way to IT outsourcing. Although cost was and often is the primary reason to outsource IT functions, other factors such as time-to-market, better global presence, quick scalability of operations and availability of high quality skilled labor and process personnel takes over as the size of the company decreases.

- **Reduction in Telecommunication Costs and improved capability of the Internet**

The ubiquity of the Internet and the millions of lines of fiber cable that have been laid around the world today permit low cost communications, which enable businesses to leverage high quality personnel from anywhere in the world making offshoring a viable option to do business and decentralize operations.

- **Enhanced capabilities of IT vendors**

With revenues hitting the billion dollar mark and years of experience behind them, the IT outsourcing companies are investing big time into infrastructure building, training and R&D. Reaping from the years of consulting experience to global majors, these firms have grown to benchmark themselves against the best-practices of the industry verticals and providing the same as enhanced quality to its clients. Also going by the tenets of *Transaction Cost Economics*, an outsourcing vendor is always at competition to deliver the best quality of goods and services in the better interests of the vendor's relationship with the

client. One bad delivery can often snag the relationship with a client and thus there is incentive to the vendor to deliver its best. On the other hand, when a company has a captive work force performing a certain function (say IT), the individual employee may or may not feel the pinch to perform at lower costs or provide superior quality because his/her job function is not necessarily threatened by competition.

All this changes the reason to outsource from plain cost improvement to that of process and efficiency improvements, and allowing clients of 'Innovation happens elsewhere' mindset to buy into something which is superior in quality at the same time achieving cost savings and competitive advantage.

- **Increased Global Demand for IT skills**

The economic growth in the mid to late 1990s contributed to global demand for IT skills, particularly in developed countries. In the wake of Y2K and the Internet boom, there was a huge crunch for technically skilled manpower in the US which led to the raising of the H1b visa limit for immigrant workers. However, the need for personnel was higher than those provided by the supply of H1b workforce.

U.S. clients also used offshore resources to augment IT staff and to respond to the rapid demand for software resources fueled by Y2K and the e-business revolution. Most of the offshoring companies had their own Global Delivery Model by which they would have consultants working in tandem at onsite and offshore locations getting the project done in a cost effective and seamless manner. The ability to quickly scale up labor on a temporary basis in another country without actually having to invest on infrastructure and training was a major factor in giving business to the offshoring companies.

- **Better scope of scalability using Outsourcing and Offshoring**

There are large populations of educated people in countries such as India, China, and Russia which doesn't have a huge domestic IT services market. Thus the capability to scale up operations in these countries is easier in these countries as compared to more advanced countries where educated masses are already employed fruitfully. A clear illustration of this phenomenon is the fact that engineers from all streams join the IT services industry in India

and also the fact that every year IT outsourcing companies have huge recruiting targets as much as 40-50% of their current strengths.

2.5 Country Consideration

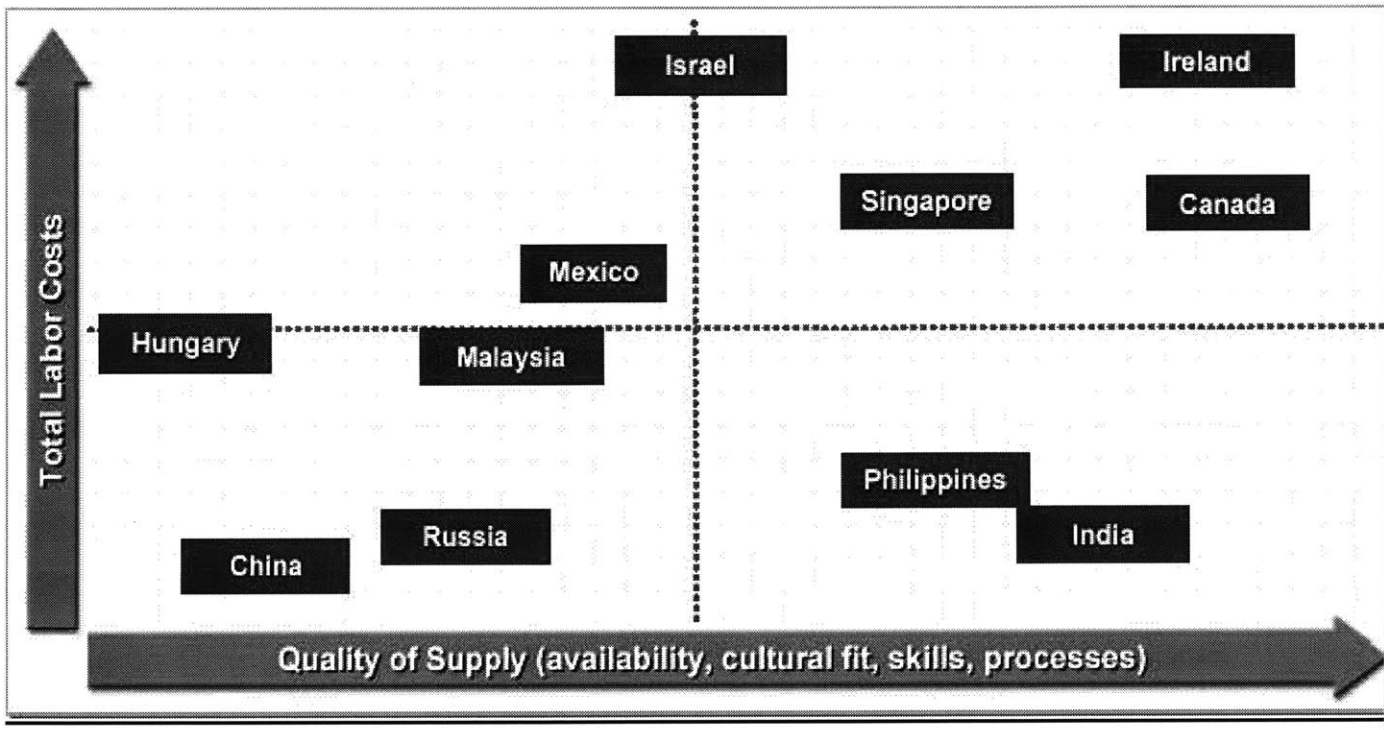


Figure 2. 5 Country Selection for Offshoring

Figure 2.5 would be a simple framework to apply to select a country for IT off shoring with the countries in the lower most right quadrant clearly the chosen winners (India and Philippines currently). If we go down to greater details countries for IT outsourcing/off shoring may be evaluated on the following points:

1. Government support for the industry/Legal System(Offshoring)

Government support for the industry in the form of construction special IT software parks, export zones, waivers on taxes,

2. Labor pool (size and sophistication)(Off shoring)

3. Infrastructure (Off shoring)

4. Educational system (and growth of labor pool) (Off shoring/Outsourcing)

5. Cost (Off shoring)

6. Maturity of quality processes used in the company (Off sourcing)

7. Cultural compatibility (Off shoring)

8. Time/Distance Advantage (Off shoring)

9. Globalization skills/English Language Skills (Off shoring)

India

With a labor force of 439 million people it has an outsourcing industry with a size of $6.9 billion in the form of 900 export only companies employing 415000 professionals. [iii]

India is the clear leader in outsourcing as of 2005 with companies leading the BPO and IT space. It has got government support in the form of organizations like the National Association of Software and Service Companies (NASSCOM) which safeguards the interests of the industry highlighting it as a major revenue earner for the country. Competition in India is intense amongst 1200 firms and consolidation is setting into the market with the bigger players are becoming polarized against the smaller players cutting off their margins. India's time difference with America is a great advantage in providing 24/7 business continuity solutions to US clients. Major threats to India are increasing

employee attrition rates in companies, marketing problems due to cultural differences, rising wages and competition from other countries.

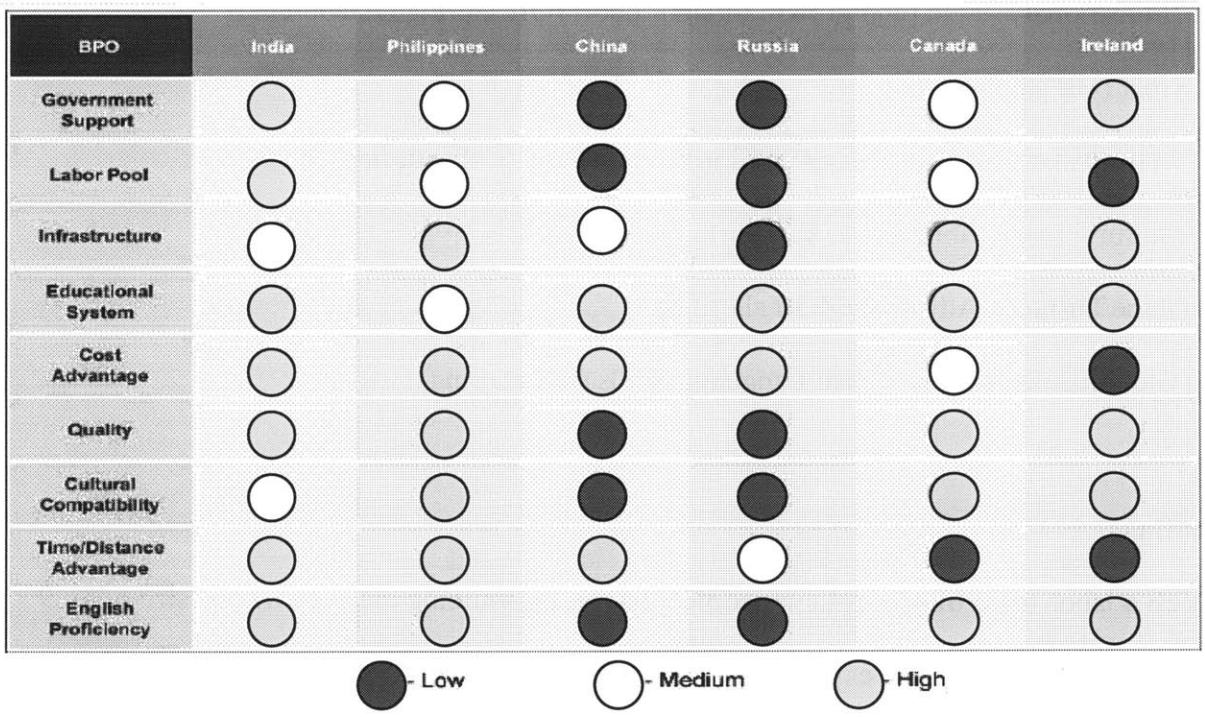


Figure 2. 6 Key factors for Country Selection for Offshoring

Phillipines

The Phillipines has a labor force of 32 million people with an outsourcing industry the size of $1billion distributed across around 1000 companies employing 290,000 professionals. Leading global companies such as P&G and Chevron Texaco are using Philippines as a BPO destination for complex business processes such as accounting, financial reporting, technical customer support etc. Although culturally there is a lot of similarity with America, Philippines lacks the 'techie' mindset of India and is thus more into BPO and IT enabled services such as call centers rather than in pure IT outsourcing.

China

China has a labor force of 734.3 million people with around 5000 software companies employing some 200,000 professionals. China's growth rate in the IT services market is considered second only to India. Infrastructure such as civic amenities, roads, housing etc is still a problem outside the IT zones and infrastructure can pose a huge problem in addition to cultural differences and language barriers. Chinese universities churn out 50000 new graduates every year and technical skills are on the rise especially with the availability of open source software such as LINUX which provides a cheaper hardware and software platform to provide training to the masses. The problems facing Chinese IT firms are that they lack strong intellectual property protection leading to waning computer confidence, lack of maturity of quality processes, lack of abilities to market and sell itself to the western world, a corporate culture which allows slow development of business relationships, corruption, and internal opposition to WTO reforms and distrust of the US.

Russia

Russia has a labor force of 72.6 million with an outsourcing industry of a size between $250-$350 million spread over 100 companies and 8000 professionals. Russia has cultural differences (language being the major one) with the West and low proficiency in English and a poor track record in global markets. Also it has little expertise in domain knowledge of business processes across various industry verticals and not many secure measures for protection of intellectual data and intellectual property.

On the plus side Russia has proximity to the countries of Europe and has good technical universities with the ability of personnel to solve complex technical problems. The emergence of National Software Development Association as an umbrella body to safeguard the interests of the IT outsourcing companies is another positive for Russia.

Canada

Canada has a labor force of 16million people and its outsourcing industry is $62.3 billion, there being around 14000 call centers employing 500000 people in all.

Canada offers excellent scope for being a near-shore services provider having an English speaking workforce, lower labor costs and proximity to US. Canada also has a stable political climate and is thus utilized in the risk mitigation strategies of many an outsourcing setup.

Ireland

Ireland has a labor force of 1.8 million people with an outsourcing industry of $9.8 billion with over 850 companies employing 30000 professionals. Proficiency in English, cultural compatibility exist in favor of Ireland but political stability, relatively high labor costs and lack of quality process maturity are some of the of the challenges facing Ireland's outsourcing industry.

Mexico

Mexico's proximity to the US and participation in NAFTA positions it as a strong nearshore option for U.S companies. There is an attractive wage structure but government infrastructure in the form of IT development parks, software export zones, training facilities etc. are missing. Mexico also lacks in English language capabilities and companies with quality process certifications such as CMM which would make them more attractive to North American clients.

2.6 Market Scenario and major players in IT outsourcing

Distribution showing the distribution by industry vertical of the IT outsourcing industry

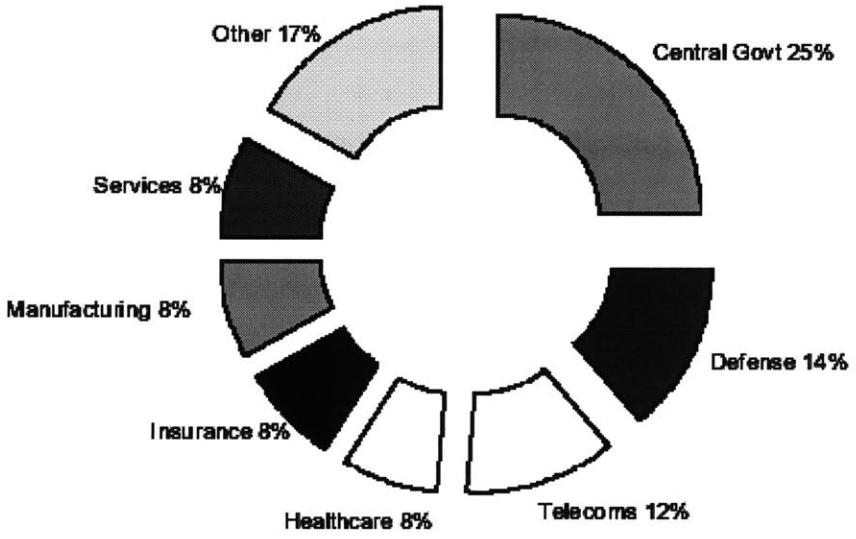


Figure 2. 7 Market share distribution by industry vertical

A look at the distribution of revenues by sector for Quarter 1, 2004 indicates that the Public Sector was the most rewarding followed by defense and Telecommunications.

Market Share of the IT outsourcing industry by Vendor as measured by share of total revenue

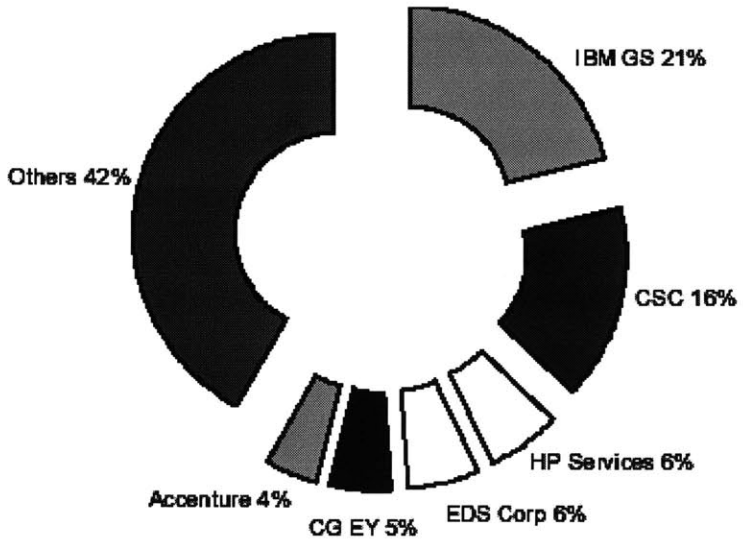


Figure 2. 8 Market Share distribution by Vendor

A look at the deals of 2003 shows that the majority of the IT services contracts still falls into the hands of a select few. The top 10 vendors bagged 68% of the contracts. The 200 top contracts in 2003 were shared amongst just 40 vendors with IBM Global Services taking the lion's share.

Top 10

2004	2003	Company	Main Activity	Annual Sales($m)	Country
1	1	IBM GS	Consulting, SI, Customer s/w	42635	US
2	2	EDS	Consulting, SI, Customer s/w	21502	US
3	3	Fujitsu	Consulting, SI, Customer s/w	18080	Japan
4	4	T-Systems	Data communications Services	13020	Germany
5	5	HP	Consulting, SI, Customer s/w	12305	US
6	6	Accenture	Consulting, SI, Customer s/w	11800	US
7	7	CSC	Consulting, SI, Customer s/w	11300	US
8	8	BT Global Services	SI, managed services, broadband services	8402	UK
9	9	CGEY	MGMT and IT consultancy	7047	France
10	10	NTT Data	Data communications	7005	Japan

			services and systems		

Table 2. 1 Top 10 IT outsourcing companies

A quick run through of the Top 10 list(based on revenues) for year 2004 and 2003 shows us that it is pretty much the North American based IT outsourcing companies with major share in the Public Sector and Defense market who are the current market leaders.

The pure offshore based companies such as Infosys, TCS, Wipro have yet to make this list. Such companies which entered the Offshoring market as late as 2001 are yet to be leaders in that market thus not showing up in the above chart, but may still demand a commendable chunk of the market in the country they operate in. For example, the annual revenue of Cognizant Technologies (India's 6th largest IT exporter) was $171.8 m in 2003 ahead of IBM Global Services India Division at $160m). [iv]

3 MARKETING AND STRATEGY ASPECTS

Case Study 1

Kareem Javed, center head for the GE-SIAS relationship was looking at the annual targets set by SIAS of the 520 odd projects comprising about 10000 people, under him. The year was 2002 and the North American economy was yet to get back to a stable footing and there was not much growth seen in the European markets too. In this scenario, it seemed a tough challenge to keep the revenues growing at a constant figure of 30-40%.

Introduction

SIAS software services, headquartered in Bombay, India had grown to be one of Asia's largest IT outsourcing firms from the year 1990 to 2000, their primary clientele being large Fortune 500 corporations in North America and Europe. In the initial years, it had annual growth rates of more than 100%, but with the company reaching a critical size of 20,000 people and $850m in revenues, annual growth had stabilized to around 30%. With global attention on offshoring, more and more companies were entering the market and the Multi-national corporations with huge presence in North America were entering the offshoring space. With 'cost cutting' emerging as the dominant reason for outsourcing, there had been a war on rates and competitors had slashed rates drastically in order to win more projects. Multi national corporations (MNC) had entered the offshoring market offering salaries in excess of the existing players in order to woo away the best of breed from the incumbent companies. Rising employee salaries and employee attrition rates had made operational

costs higher on the other hand. The challenge was to surpass the competition, win larger scale contracts and raise profitability levels.

3.1 Rates

SIAS had started out as Information Technology consultants and they had landed their first few projects based on their low onsite and offshore billing rates. During the Y2K boom and then in the Internet era, the top level consulting firms had maintained rates of 300$/hr whereas the middle tier was around 150-200$/hr and the lower segment was less than 100$/hr with offshore rates ranging from 11-20$/hr. In the Internet era, the key driver of IT outsourcing was time-to-market as every firm wanted to be the first to be out in the market with a fresh idea and they were ready to pay higher rates to achieve that. SIAS being a player in the low rates zone had attracted routine applications maintenance contracts from big corporations which wanted to save costs on routine jobs. There was not much competition in the lower rate zone as the market leaders were concentrating on the upper segment of the market. The post Internet era had seen rates crashing in the economic downturn and most IT outsourcing firms slashing their rates creating a huge competition in the lower zone. SIAS had to cut their already competitive rates of 65$/hr to 50$/hr onshore rates in order to win project bids. Although reliable services at a low rate was still the value proposition for SIAS, it was slowly becoming clear to the top management that slashing rates was just a temporary fix and it wasn't long before the rates would bottom out and the IT services marketplace, in general would become that of a commodity.

3.2 Dollar/Rupee Conversion Rate

"Beyond a certain hedge period, the IT companies have to accept the impact on the margin due to depreciation in US dollar,"

.....Tata Consultancy Services managing director and CEO S Ramadorai[v]

SIAS had constantly to do financial currency hedging for all of its billing in foreign currency.

A fall in the conversation rate of the dollar to rupee would mean lower revenues for SIAS and vice versa. With 70% of its revenues coming from companies in North America this was a serious concern for the management of SIAS in managing top line revenues.

3.3 Value Chain

SIAS was aware of other consulting firms providing services to the very same clientele that they serviced. Usually these consulting services would be aimed at corporate and operational strategy, business process management, business process re-engineering etc. What was remarkable was the fact that these services commanded much higher rates than the traditional IT consulting. SIAS decided that this was an existing opportunity waiting to be tapped.

Doing a study of the IT consulting space it was soon clear to the top management of SIAS that their firm needed to do something to rise beyond the 'rates war'. A value chain analysis of the IT outsourcing marketplace laid open before them an array of opportunities that could be explored.

Figure 3. 1 The consulting services pyramid

At the top of the bottom of the pyramid was the **IT consulting** providers and at the top were the **Strategy Consulting** providers serving the corporate heads of companies and earning top billing. In the middle layers of the pyramid were other core and non-core services being outsourced like HR, customer care, and compliance. Outsourcing companies who had started at the top of the pyramid had successfully navigated the other layers of services by either adding to their capabilities or by acquisitions and partnering with other firms to provide the entire spectrum of services. However, it had not always been possible for outsourcing firms at the bottom of the outsourcing pyramid to move up the value chain. Outsourcing firms which started out providing strategic services at the corporate level of a company gained better recognition, visibility within a company which then opened the doors for consulting in all other levels of the company. IT outsourcing firms on the other

hand entered either at the bottom or attacked a particular silo of a company and thus lacked visibility and recognition within a company unless the IT function was related in a major way to corporate.

The width of the layers of the consulting services was representative of the number of opportunities available in each layer. As we go higher up the pyramid, we find that the number of opportunities decrease but the billing rates increase.

Obviously in their bid to reduce costs, customers were not just asking for lower services costs/hr but higher value at a system level. They were looking for higher overall ROI from their operations. The IT outsourcing firm had to look beyond its borders of providing technology services and see how Technology would fit into the overall corporate strategy and thus participate in overall value delivery to the client. Transformational Business Process Outsourcing was one of the many options of Business Process Outsourcing that SIAS management was considering.

Presence in Various Layers of the Value Chain

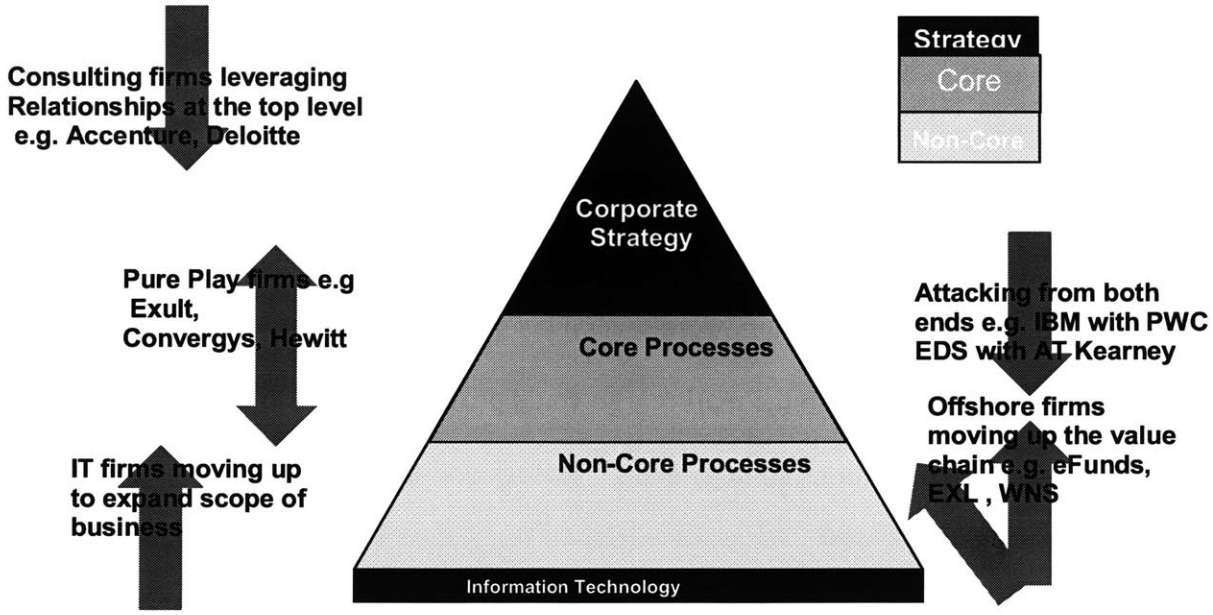


Figure 3. 2 Migration of consulting companies across the services layers

The services in a company which could be outsourced could be broadly classified into the above four layers viz.

- Corporate Strategy
- Core Processes
- Non-core Processes
- Information Technology.

Consulting companies which had entered the outsourcing services pyramid from the top that is corporate strategy and core-processes found it easier to migrate to services further down the pyramid by partnering/buying other firms (example AT Kearney joining forces with EDS) which could provide services at the lower end of the pyramid. Entering the services pyramid also provided much needed visibility to these vendors to the corporate management

of the client and thus made it easier for them to provide services lower down the pyramid. On the other hand companies which entered the pyramid from the bottom such as the pure IT players such as TCS, Wipro found it tough to migrate up the services pyramid usually as IT being a peripheral facility with most companies didn't garner as much visibility and attention on the vendors achievements.

One thing which was clear that there were several layers to the Outsourcing space and there were only a very few players in the market who could provide services in all the layers from corporate strategy to operations strategy and IT strategy and down to IT implementation.

Such players had better credibility in the market as system integrators and could demand large sized projects and multi-year contracts. There was an obvious movement of firms in the market to achieve such functionality either by acquisitions, partnerships or through spin-offs. It was evident to SIAS that a re-positioning from a pure IT consulting firm to a firm providing end-to-end solutions to the client was a better value proposition in the changed market place. SIAS tried to address this in two ways:

- By acquiring other companies operating in different segments of the services pyramid such that SIAS could be presented as an enterprise wide solution provider.
- By trying to form specialized groups within the organization for addressing the spectrum of services required to become full scale system integrators.

3.4 Marketing

Being a Bombay based firm, the majority of the managers were of Indian origin and most of the marketing decisions were taken in India. There were business development managers stationed at different geographies close to client sites in the U.S. But since these were mostly Indian managers doing business in U.S cultural differences with clients were beginning to show. It was being felt that there were perception problems with American customers having to entrust its business with a totally foreign IT firm. This perception may be coming in the way of clients awarding their mission critical projects to a company which seemed based out of India.

Another viewpoint that had transpired to the SIAS management was that hiring managers local to a country also meant that they were better conversant with the cultural nuances of the country and thus being able to provide a superior service levels to the client. Cultural differences, such as mannerisms, body language, work culture etc. also often caused these foreign IT firms to be viewed differently. The cultural difference between the vendor and the client was a grey area which when worked upon could lead to wider acceptance across a greater customer base.

Moreover, there was 'a matter of pedigree' in the sense that clients from Fortune 500 companies were more willing to pay higher rates per hour for consultants from good universities in the West. To grab the attention of top-notch clients and to deliver the experience of a superior IT consulting firm, SIAS needed to have top notch professionals preferably hired from local universities and workforce and also to have de-centralized marketing offices to respond better to local clientele and understand market stimuli. Slowly

it was becoming clear to the management of SIAS that simply having people capable of doing high-end consulting wouldn't necessarily translate into projects.

The company's image as a low-end IT consulting firm had been firmly entrenched into the minds of its existing clientele. It was not easy to get upstream with existing clientele. Either they needed a new brand name for the new services or they needed to find new clientele who had never done business before with them. Amongst the various options they were considering were

- Partnerships tie-ups/Acquisitions with local firms to provide a more global feel to the company.
- Global Diversification of Employees to deal with its global clientele.
- Spin-off from SIAS into small consulting firms with expertise hired from the best in the world.

3.5 Partnerships tie-ups /Acquisitions

One way to solve the branding problem was to go into partnership with a Multinational firm with a well-established name and thus enter the business of Business Process Outsourcing. SIAS on the other hand could provide its expertise with offshoring which was a resource which many of the big up-market players would be looking to tap into.

The other possible route was acquisition of smaller firms across different geographies catering to smaller niches with impressive clientele. This was a quick way to make an entry into the market with some ready expertise and customers. But, this also meant a lot of expenditure for SIAS.

3.6 Global diversification of employees

Added to the requirement for creating a brand image in the various geographies was the 'backlash' factor. Recently, SIAS had encountered backlash in the form of public outrage followed by attempt at passing regulations against offshoring by various local bodies and governments in different states of America. Primary amongst the reasons for the backlash were huge job-losses due to the economic downturn and the perception of SIAS as a firm which takes away jobs offshore instead of creating jobs locally. This backlash could affect the public image of the company as Fortune 500 clients wouldn't want themselves to be associated with the backlash. SIAS decided that the decision to create a local workforce in the geographies it operated would be good both for righting the image of the company as a job provider and also would augment its marketing efforts in changing the perception factor around the company.

The desired positioning that SIAS would be that of a global IT consulting firm and not necessarily just another offshoring firm.

In 2002, SIAS started its university initiative in order to spread the brand name amongst budding engineers and managers. Under the scheme it started offering internships and part-time employment to college students at universities of repute later adding full-time research grants and funded entrepreneurship contests to this program. What SIAS essentially achieved through this was a local presence at universities and educational institutions which would be the bed of future engineers, managers and consequently decision makers of the country. Also this provided excellent press for the company and bolstered its public image as an international brand and also a community player.

Opening training centers to train local youth in IT skills and subsequently providing them employment was another initiative that added to its public image.

3.7 Spin-off

SIAS was considering opening an elite Strategy Consulting division staffed by lateral hires from across the industry to spearhead its movement into the upper end of the value chain. The financials of this new company would be handled separately. The consulting work taken up by this company would be charging much higher rates being staffed with experienced people from top level consulting firms from over the world and thus the salary structures would be considerably higher.

3.8 NASDAQ listings

SIAS, already listed on Indian stock markets, felt that a listing on foreign bourses was another sure-shot way of gaining attention as a formidable player. There were millions of people trading in stocks all over the world and they took pains to learn about the companies they traded in, the process making them more knowledgeable about companies about which they had nothing to do in their day-to-day lives. SIAS financial performance had been commendable for the last five years with an average annual growth rate of 30% in revenues and it hoped that a listing in NASDAQ would surely mean being written about in analyst reviews and listings thus drawing the attention of major corporations, marking SIAS as a credible partner to do business with.

A stock listed in the stock exchanges of several countries was the hall-mark of a truly international company and would be a huge plus on its international branding strategy.

3.9 Vendor's client list/Strategic Relationships

SIAS was already doing IT outsourcing projects for a great number of Fortune 500 and blue chip companies. The ability to quote this clientele on its Request for Proposals (RFP) improved its chances at getting projects with new firms. Thus more successful projects with higher man-hours of experience with renowned clients had a positive feedback on future opportunities. Thus SIAS had a plan in place for getting projects appraised by clients and taking action on their feedback so that their satisfaction was achieved, resulting in referrals and appreciation at the end of projects.

70% of its projects came from repeat business and such SIAS tried to build strategic relationships with its major clients. Such relationships entailed setting up several offshore development centers. Often it was possible that an employee of SIAS would have worked on the projects of a particular client throughout and thus would be extremely knowledgeable about the client's business and systems. Strategic relationships helped SIAS become the preferred vendor for many projects and thus win projects even without competitive bidding. This also meant that SIAS knew about the business of these partnering companies in detail and could be thus considered for other kinds of consulting up the consulting value chain.

3.10 Domain expertise

SIAS planned to have a 'vertical strategy' i.e. have separate divisions to explore all the possible verticals from banking, retail, pharmaceutics etc. A vertical strategy it hoped would help the company build domain expertise and that would help them with Business Process Outsourcing. The practice earlier had been to classify employees according to their expertise in a particular technology and people jumped from one project to another

depending on the needs of a particular project for a particular kind of technology. This caused employees to have scattered knowledge of various domains. Neither there had been an attempt to codify that knowledge nor there were any incentives listed to employees to continue in a particular domain. To initiate their vertical strategy SIAS was going for hiring of domain experts who had business knowledge of various business verticals such as insurance, banking, pharmaceuticals, retail etc. to lead each sector. These people by providing right training and guidance to the rest of the employees would provide the right workforce to establish SIAS in the various sectors.

3.11 Quality/Process certifications

SIAS had been recently assessed as a SEI-CMM [vi] Level 4 company. It was already achieved 9000 certification way back in 1990 and was trying to keep abreast of the latest certifications going on in the market. Although the benefits from having multiple quality processes were not quantifiable, yet these certifications were handy in quoting in Request for Proposals and in winning projects especially with international clients. As pointed out in the 'Frameworks Quagmire'[vii], the number of certifications and certification granting bodies had spawned to match every aspect of business, IT, HR process and practice. But recognizing the fact that there existed the quality 'Quagmire' they knew that it mattered for the perception of the company and that money had to be spent on employing resources to keep the company up-to-date in the 'process certifications' which were most desirable in the market and also to align the functioning of the company along the lines of these process models so that these certifications were not mere certifications.

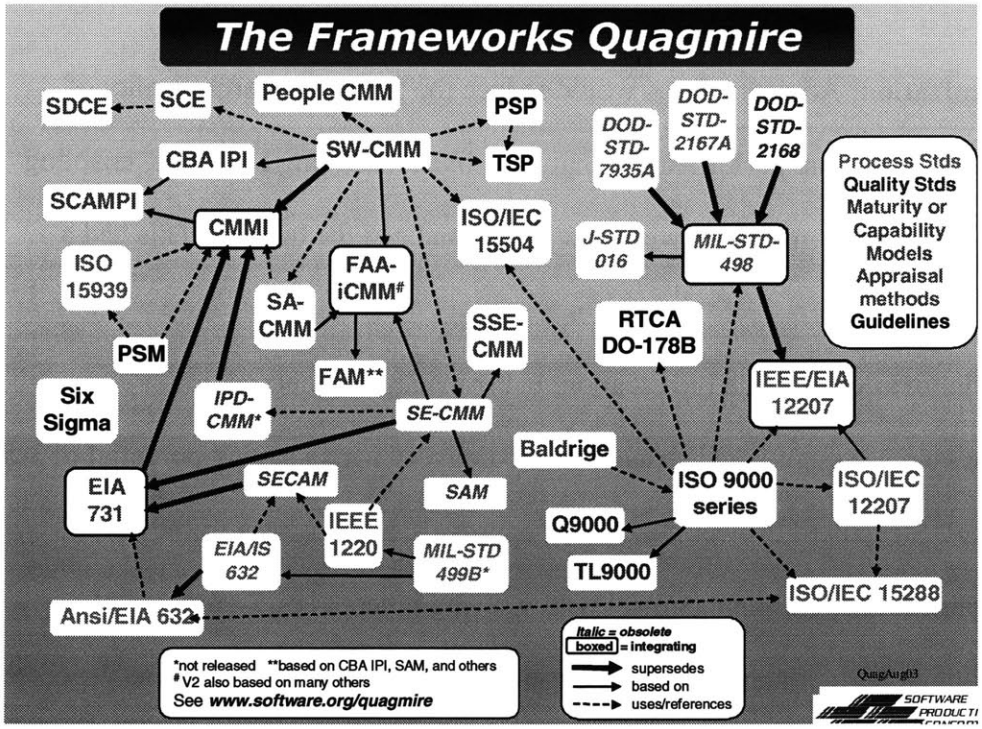


Figure 3. 3 The Quality paradigms quagmire

3.12 Offshore Sourcing Advisors

A new business of advisory services for offshoring had sprung up and had achieved a critical mass of $500m by 2002. Firms like NeoIT provided specialized consulting to firms for gaining offshore knowledge, building an offshoring plan, sourcing outsourcing vendors, and managing the offshore presence. Thus, in a way, these Offshore Sourcing Advisors were brokering firms bringing together clients seeking offshoring solutions and vendors providing them with the right kind of match.

The key drivers behind the success of these advisory firms were[viii]:

Enhanced Competition: Advisory firms could effectively arrange bidding for projects by various competitors and thus gain price advantage by efficient bidding (15-20%) cost savings.

Decision Optimization: Advisory firms would reduce the time to research quality of vendors, analyzing their past performance, analyzing bids, managing bid cycle, enabling collaboration and do a best match between the job at hand and the bidders. This had a saving potential of 5-10%.

Improved Collaboration: Online bid creation, bid management, negotiation, communication increase quality and reduce time to delivery with a saving potential of 3-5%

Process Control: Structured Project Definition, approvals, and analysis framework deliver financial discipline and operational control with a saving potential of 7-10%.

SIAS was looking at partnering with one of these advisory firms and aligning its processes according to the tenets of the advisory firm. A lot of corporation in America which were new to outsourcing and offshoring were approaching these advisory firms to get the initial know how and get started and as such these advisory firms were a good source of new projects. On the other hand, doing business via these advisory firms meant that they had to abide by the management of these companies, lose direct contact with the client and in the long run become second in choice to these advisory firms for delivering total solutions.

So instead of the IT outsourcing firms rising up the value chain there was this threat from the advisory companies of becoming the system integrators by sourcing the right solutions from different vendors at competitive prices and delivering a complete solution to the end customer. This was something which had already happened in the manufacturing industry.

3.13 Global Delivery Centers

SIAS followed the Global Delivery model in which dispersed teams across the globe collaborated towards a common project making way for low-cost, distributed, process centric remote delivery capabilities. A typical project would have part of the development team on-site, working closely with decision-makers and business users to carefully manage requirements over the course of an enterprise project. The other part of the team would work off-site. Off-site team members were equipped with the same deep technology skills and core practices as their counterparts onshore. This co-located approach provided SIAS with the ability to minimize risks on highly complex projects while leveraging the global economics of remote development. A multi-location approach ensured that projects of high criticality were not disrupted by local political or geographical inclemency at any particular site and there was a fall-over mechanism in place. This was highly attractive to North American customers as it provided them true 24/7 functionality (it was day during the time it was night there and thus work which had been started in the morning onsite could be completed offshore while it was night there). This was especially advantageous for support, maintenance and projects which required rapid action.

A classification of work was done into three categories to better decide which kind would be better for offshoring as opposed to being done at onsite.

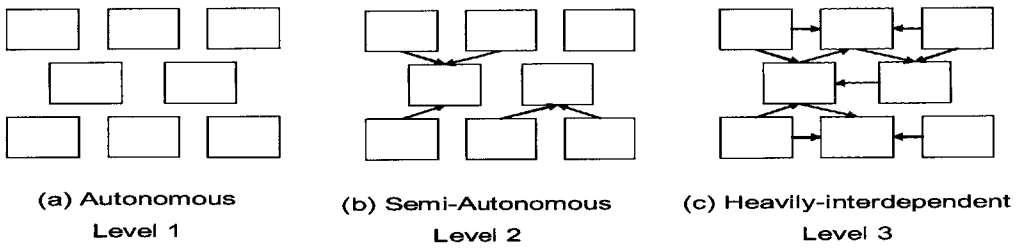


Figure 3. 4 Classification of work for offshore vs onsite exectuion

Level 1 /Autonomous work involved work which needed less expertise and inter-people skills such as call centers.

Level 2/Semi-Autonomous projects which involved some kind of complex thinking, interpersonal interactions and hierarchy of experts such as maintenance jobs

Level 3/Heavily-Interdependents projects involved work which was highly complex in nature and required heavily interdependent activity between people for example Software Development.

Scale was another bonus which came with the Global Delivery Centers. With the GDCs it was possible for SIAS to scale up resources for a particular skill set or technology which was not possible for the traditional onshore based IT outsourcing company. Scale was an important factor which was considered when projects spanning more than $100m and more than 3 years were being awarded.

3.14 Risk management

Post 911, risk management had become a hot criterion for selection of a partner for offshoring. Risk management was essential for meeting the service level agreements of projects and maintaining continuity of functioning of businesses. Including a risk management plan was standard with every request for proposal and project plan. Having better risk mitigation facilities made a vendor more attractive for mission-critical projects. Thus although effective risk management was a concern it was also an opportunity to differentiate oneself from other vendcors.

SIAS had up a separate team for risk management and was doing a pretty thorough job of managing risks.

- **Legal protections**
  - Master services agreement (MSA)
  - Statement of work (SOW)
  - Service level agreements (SLA)
  - Confidentiality & IP protections
- **Network and connectivity**
  - Segregated LAN at the remote location
  - Dedicated connectivity with multiple physical controls (at router level)
  - Limited access on need-to-know basis
- **Individual**

Background checks

  - Signatory to confidentiality agreements

- Specific user-ids at platform and application level

➢ **Security**

- Securing offices with electric devices and software
- limited access to email and Internet.
- Strict rules around transport of magnetic goods to and fro from the workplace.

➢ **Business Continuity/Disaster Recovery plans**

- Asset, site, and city level protections
- Disaster recovery servers placed at nearshore centers in Canada for outage in offshore.
- Incident notification by the vendor

3.15 30:70 Rule

SIAS had a generous number (about 5000) of its 20000 people working onsite at various client sites in North America and Europe. Mostly these employees were billed on a Time and Material basis typically which meant that it was on the client's discretion to keep the number of people they wanted onsite and offshore.

With lower salaries, lesser operational and traveling costs offshore were a more profitable option for SIAS. Post 911 when the economy did a nosedeive and 'cost' became the driving factor to outsource, the model of 'fixed price' projects became the dominant one. Under a fixed price project, SIAS had to quote a total cost for a given RFP and the money would be paid by the client based on fulfillment of certain milestones in the RFP. However, with the advent of fixed price projects SIAS had the freedom to choose the ratio between onsite and offshore for any given project. A ratio of 30:70 onsite to offshore ratio was decided as

optimal and an attempt was made to strictly enforce this ratio across all projects. Under this model, depending upon the specific set of services involved and scale of the project, SIAS would put in place a combination of onsite and offshore technical resources that became a virtual extension of the customer's team. On an average, 70% of the total effort was done offshore and 30% at the customer's site. Typically, an onsite coordinator or a small team from SIAS would be located at the customer's site to synchronize between the offshore team and the customer. With a higher offshoring ratio, and a staffing plan as per its own wishes, SIAS could actually be frugal on resources for any given project and use that advantage to bid very low on the RFPs. The quality of hires was also no longer monitored by the client under the fixed price model and thus SIAS started cutting back on the quality and experience of employee hired to sustain its profitability under competitive bidding prices. Thus the pressures began to be felt by the Project Managers and the Project Leaders both with

- Lesser number of people per project onsite to handle essential project communication with the client and delivery and
- Lesser number of experienced people to fulfill projects. To keep costs low in fixed price projects they would have one or two experienced employees supported by a majority of inexperienced and fresh hire.

Thus while the number of projects bagged by SIAS based on low fixed price costs began to increase; the cracks felt in the quality of projects delivered began to show.

3.16 Service Level Agreements(SLA)

Service Level Agreements are fundamental to both providers and recipients of services. They define the terms of engagement - the rules that will govern the relationship. For important services, therefore, it is essential that the service level agreement is appropriate. SIAS had strong service level agreements with its customers which made it attractive to customers as being a reliable and predictable vendor.

SLAs also helped in the following ways:

- Service definition: Correct service definition helped both SIAS and its clients achieve the right targets for any project.
- Performance tracking: Helped the clients track performance at every stage of the project thus keeping project metrics at bay.
- problem management: Set rules for problem escalation and tracking
- Fees and expenses: Puts in a contract form the various fees and expenses involved in a project.
- Customer duties: It defines the duties of the customer towards the vendor and the project, identifies the resources, facilities which must be committed to the vendor at every phase of the project.
- Warranties and remedies: Identifies the warranties on the product delivered to the client e.g. number of acceptable bugs in the first delivery, First Time Right etc. Also determines the remedies when the warranties are breached.
- Legal compliance: Codifies Legal Compliance issues. This is very important for Defense and government clients.

- Termination: Refers to the clause of termination, penalties etc.

3.17 Regulations

Post 911 with new security regulations in place, SIAS was becoming aware that the Department of Defense (DOD), DOC, US State Department and other agencies all could limit what can and can not be exported. The purpose of the regulations was to protect U.S security since a number of technologies had dual use both in commercial and military applications. In this day and age America was very concerned about the proliferation of weapons of mass destruction to terrorist groups or any technology that could aid them in their goals of creating or acquiring such weapons.

The other form of regulations involved protectionist laws which tried to stop outsourcing by levying huge taxes and implementing import laws on software. These measures were being taken to appease the American public suffering from joblessness.

SIAS's legal department was taking note of the new regulations in place and taking extra precaution in writing its SLAs and project contracts.

Conclusion

Kareem Javed was running through the list of many things which SIAS software had already done to establish itself as a strategic market player in the IT outsourcing space and what possibly had not been done or what was not being done right.

He called a meeting of account managers and the practice heads of the different specialized groups such as quality, six sigma etc. to share with them the revenue target they had been set and to brainstorm with them marketing strategies for the coming year.

4. ORGANIZATIONAL ASPECTS

Case Study 2

Introduction

SIAS stood at 20000 people and 30 offices worldwide after a decade of blitzkrieg growth and expansion. Managing the operations of the company had become as challenging a task as finding new business and growing the company financially. Traditionally it had been a clear distinction between the hunters and the farmers – the marketing and strategy wing of the company which got fresh projects versus the organizational and administrative section which managed the show. Now it seemed that the two were not much different at all – they were heavily inter-related and success of the firm lay in close attention to both aspects. Srini as a senior project manager at SIAS knew well enough that although SIAS seemed to be doing all the right things in the market and his position within the company was quite enviable, there were times when he didn't have all the solutions to the dynamics that these offshoring projects presented him with. Although on the outside it seemed that everything was smooth and functional Srini knew that managing these offshore projects were more than smooth. Sometimes, he thought that if he had some time from the daily tidings which took away most of his time, he would invest it in studying the cause and effects of the various forces in his projects and maybe come up with some models of behavior for his teams to follow that would make their life easier.

4.1 Changing Client Requirements

Most projects in their execution phases were not remotely similar to what they were envisioned to be in the RFP and Project Plan. Most of the clients that came to SIAS with projects had earlier have had experience with IT outsourcing and their existing software would have been a result of that. Usually, clients carried documentation of the systems which were much more ancient than the changes which had been done on the systems. RFPs and project plans are drawn by taking a look at the existing documents and then with verbal discussions with some people representing the client's side who may be fully or partially knowledgeable about some or no part of the system. It is often believed that if an attempt were made to write an almost perfect requirements document then the project would never get started. In the inception phase of the project, there is a big push to get the project started and learn about the requirements on the fly 'as you go'. Thus the initial requirements document which is prepared before the design and execution stage of the project may be a highly unreliable source of information. This is more so of IT offshoring projects where the geographical differences between the client and the development teams are huge.

Often the client business representative in charge may lack the initiative to pass the correct information to the IT outsourcing firm. Often the attitude is that 'this is the system, understand what it does and just make us what we want to have'. Thus the onus of guessing the client requirements and building something to the order of that guess lies on the outsourcing firm. Since the requirements document is almost always never accurate, there exists huge scope of changing client requirements later. Changing requirements at a later stage means that the development team usually has to devote part of their time for the earlier project whose requirement has shifted. This phenomenon induces errors in the current

project and hence' re-work'. Thus with the introduction of shifting requirements in the project, the entire project schedule can be thrown into jeopardy.

4.2 Onsite-offshore ratio/ Knowledge Transfer

For the fixed price projects, the onsite-offshore ratio of 30:70 that SIAS had enforced upon its projects to achieve profitability was bringing in the revenues since it was introduced. The customer experience was directly proportional to the number of members onsite in a project. A certain number of people were needed were needed to communicate with the client and more to co-ordinate with the offshore project. With a near 24h time difference, it was not possible for the sample group of people to do justice to both tasks. More people onsite meant that the client could directly interface with more people about the project and also take their valuable opinions regarding technology investments and subsequent project decisions. Also the clients felt that knowledge transfer could happen at a much higher rate with more people onsite than at offshore.

From SIAS's point of view more people offshore meant higher revenues in the form of lower salaries to be paid, less traveling costs and lower operational costs. Thus the 70:30 ratio was a direct tradeoff between customer experience and ROI.

From a project management perspective, a leaner ratio onsite meant that people onsite had to be shared across several functions. Often one big project had several sub-projects under it. The project coordinators onsite had to be shared across all these sub-projects thus stretching them too much. The onsite team would have to interface with the clients during the day time and then settle issues with the offshore team during the night. As the number of sub-projects grew, the amount of complexity grew and it became more and more difficult

for the people onsite to coordinate between onsite and offshore properly. Not much thought had been put into how the matter of project coordination quality would be affected with fewer number of people onsite and it was now the project manager's job to fix the problem and uphold the company's revenue earning initiative.

4.3 Incentives

SIAS was an employer of choice at college placements for many young graduates in India. It paid salaries comparable to the mean of the IT outsourcing industry.

Apart from the salary the main attraction for employees in working with SIAS was the opportunity to go abroad, work in distant lands and make money in foreign currencies which then converted to a lot of money back home. Typically SIAS would send an employee onsite for a year on a project and then bring him/her back offshore to work on its Global Delivery Center. Short stretches of onsite for the employee meant a potential of staying with their family and yet making a lot of money on trips. This was rather attractive to a generation of people who were deeply rooted in their country and wouldn't necessarily want to migrate to a different country for work but who also wanted to enjoy the wealth of foreign earnings. Although this was not explicitly maintained, this was a huge factor for employee fidelity. Employees necessarily didn't look at the salaries they drew on their pay stubs, rather the money which went into their banks after a year of working offshore and making project trips. This was a stark difference from the MNC companies which set up offshore units whose primary objective was to have offshore units for offshore employees and onsite units for onsite employees thus removing the incentive of foreign travel and

potential extra earnings. Thus the attrition rate in SIAS was lower than in other companies.

4.4 Attrition/Hiring

However SIAS knew that attrition was a truth of the IT outsourcing industry due to the huge number of opportunities available, and they had to face it sometime or the other. The real cost of a employee leaving a project midway was huge. The only way to replace an experienced hire in a particular technology was to go for lateral hiring which meant higher salaries than normal had to be offered to get a person on board.

SIAS used a portfolio approach to solve this problem. SIAS was part of another holding company which had other IT outsourcing firms in its portfolio. In times of need, SIAS could always migrate employees from its sister concerns for projects. This way they didn't have to raise the employee count to fill a temporary necessity and make the company top heavy. Also they didn't have to spend extra money for lateral hiring.

Thus SIAS could control the hiring in the company as required and at the levels they desired and at the salary levels they were willing to offer.

However, the 30:70 rule was removing the halo from SIAS as fewer employees would now get an opportunity to be abroad and that wherever the opportunity arose the probability of being sent onsite was higher for experienced hires vs. new hires. Being onsite became a coveted commodity and people who had long been forced to work offshore began to leave the company for other firms offering higher salaries.

4.5 Bidding /Effect of competition

After the advent of the 'Fixed Price' model most projects were won through a process of bidding in which Request for Proposals would be submitted for the project and then the

project would be allocated based on the best fit of vendor, resource capabilities of the vendor and the price for which the project was bid for. Since managers had to meet their end-of-the-quarter targets for sales, often the projects would be seriously underbid in order to win.

Since these projects had been underbid, SIAS couldn't afford to allocate many dedicated resources to the project. Since the allocation of manpower in a fixed price project was at the discretion of the outsourcing vendor, often a few experienced people would be put in the project with inexperienced hires in order to match the cost of the project. Resource sharing from other projects would also be done to fulfill any high-pressure situations and thus contingencies would be mitigated. With pressures mounting in projects as the resources became leaner and a lower onsite offshore ratio, employee morale took a beating as Project Leaders had to meet project requirements with lesser manpower and even lesser experienced manpower. The paucity of experienced hires in the project would also mean that there would be overshooting of project completion dates and then due to pressure from the client the need to hire more experienced staff would finally arise.

"Adding manpower to a late software project
makes it later" - a result of the fact that the expected
advantage from splitting work among N programmers is O(N)
(that is, proportional to N), but the complexity and
communications cost associated with coordinating and then
merging their work is O(N^2) (that is, proportional to the
square of N).

- Fred Brooks, a manager of IBM's OS/360[ix]

Although Brooks' law was very well known amongst project managers in the IT industry, it was overlooked time and again in the pressure to react to the situation at hand. A new hire to a project was always seen as a quick-fix to answer the project leader's plea for low manpower in a project.

4.6 Career growth Line of Business/Line of Technology

A typical college graduate hire at SIAS would be promoted to a full time employee after a year in the company. Typically SIAS had to give employee raises every year after that to keep employee salaries up to the market mean or face low employee morale and attrition. Interestingly, there was not much differentiation as per the client billing rates go for experienced employees. So after around five years of service in the company the employee's salary would start catching up with his/her billing rate. And in such case, there was no option left to the employee to leave the field of technology and move up the value chain to project management and program management. This was a loss to SIAS as many employees wanted to keep their technical skills and proceed in the 'Line of Technology' but were discouraged. People with strong technical skills would scale up to project leaders and then move on to technical areas such as 'Centers of Excellence'. But in no case was the level of growth achieved by employees rooted in technology the same as people moving in the 'line of business' which involved business development, Business Process re-engineering etc which were aimed at taking the company up the value chain and thus could generate higher revenues for the company. Not always technical people had a bent of mind

for business so people fell out of place at the company after five years because they were given adjunct treatment as far as annual increments go.

4.8 24/7 Delivery and Communication

SIAS had touted itself as a company with 24/7 round the clock global delivery centers. Although SIAS had some third party issue tracking software it didn't have any special software for transferring work from one person to another or one group to another in a seamless way. The standard means of communication was through chat tools such as Yahoo Messenger and Lotus Sametime. Much of the communication and sign-off between onsite and offshore was highly informal. A lot of the communication which happened in this informal way couldn't be documented or used as official documentation later. Due to lack of proper electronic tools for hand-over and take-over between parties on two sites, actually people had to make it earlier to work or stay back after work to meet the person at the other site, online. This again forced employees to stay back late due to no fault of theirs at no extra pay. This led to lower employee morale. SIAS was thinking of buying some software for managing projects at multiple sites and effective communication tools which would enable simultaneous communication and documentation.

4.9 Process Methodologies and Quality

SIAS was certified under a lot of Quality paradigms such as ISO, CMM and was always striving to gain process methodology certifications such as six sigma for its employees. This was important from a strategic point of view for the company as this made SIAS more attractive to North American clients. However from a Project execution standpoint this took

up 40% of the project leader's time trying to fill up documents in compliance with these certifications. Often the strategic intent of these process and quality certifications were lost on the individual employee who questioned the value of these certifications in bettering the quality of the project. Also since these certifications had grown gradually in the company, there was no single tool for filling up data for these process certifications. As a result, the amount of redundancy in maintaining the documentation and process steps for each quality certification was huge. Employees with a strong bent towards technology believed in their hearts that they would be better off studying some new technology rather than spending time on redundant documentation. Being forced by management to follow these 'Quality and Process' norms, there was wide-spread frustration amongst employees in SIAS.

4.10 Cultural Differences

SIAS was aware of the cultural differences between its mostly Indian employees and its European and North American clients. These differences would produce problems in written and oral communication, employee and client relationship at client site and in day to day project execution activities. Often misunderstandings that happened between SIAS employees and the client representatives were due to the fact that each party had a different cultural lens to an issue. SIAS was training its employees to be aware of the cultural nuances of other countries and correct telephone and email communication skills.

4.11 Subservient behavior

India had been a British dominated colony for 100 years. It was an unspoken fact that Indian employees had a subservient attitude towards North American and European clients. Indian employees would take on work upon themselves over and above what they were scheduled to do being culturally seasoned to not say 'no' to anybody. Often this was the main reason

why SIAS would get projects over other vendors because the clients knew the amount of extra work they could get done from its employees as compared to that of other vendors. Also because of the huge competition in the market with every vendor trying to appease the clients, there was an effort from the managers to delight the clients to their fullest abilities. This often meant that extra requirements, above and beyond the SLAs were accepted to please the client and then it was the responsibility of the team members to do the extra job. Often a SIAS employee found he/she branded as a 'contractor' as opposed to a consultant or partner. A 'contractor' was typically allocated under a client manager. Although this particular employee may be at a proper rank in his/her own company, being named as a contractor reduced him/her in the project hierarchy automatically.

SIAS also gave different salaries to employees hired onsite as opposed to employees traveling from offshore to onsite for executing projects. This was mostly due to the fact that to hire employees onsite, salaries in order with the market had to be offered. However,this created either an inferiority complex or detestation in employees traveling from offshore to onsite as they felt that they were being paid less for the same work done by employees of the same compnay. This had an adverse effect on the employee morale as there was a fall in the employee's perception of the company as the leading outsourcing company and this then showed in the quality of employee's services.

4.12 Immigration and Visa restrictions

INS was a huge regulating factor for SIAS. At any given time, the number of employees onsite was determined by the number of ready work permits that the company possessed the quota for the year set by INS, number of months of employee experience required before

they could apply for a certain kind of visa etc. SIAS had a special division in HR which dealt with VISA issues and immigration.

Notwithstanding all these project managers had to stay flexible with sending people onsite time-to-time as the project needs arose so they had to plan in advance as per the project scale and onsite offshore requirements. Ability to ramp up resources offshore and onsite was a desirable quality. The life of the employee abroad and his/her dependents was linked to the period of time he/she was allowed to stay in a particular country. A work permit usually allowed limited abilities to the employee abroad. Application for permanent and semi-permanent citizenship such as Green Card provided the employee with more stability and powers to operate in the company. Due to the contractual notes inbuilt in these visa applications forced the employee to stay together with the company. For the company this option also provided a cheaper workforce onsite than possible if all hiring was done abroad. The ability to offer immigration and citizenship facilities also was a major deterrent to employee attrition.

Conclusion

Srini looked at all his notes and thought it was time to get back to work. Maybe he will take a look again when he had the time to make more sense out of it all.

5 CASE ANALYSIS WITH SYSTEM DYNAMICS

The Standard Method (Appendix A)

We use the System Dynamic Standard Method (see Appendix B) [Jim Hines] [x] to analyze the two case studies on IT outsourcing developed earlier. The standard method is the sequence of activities that most top System Dynamics practitioners follow in doing their projects. It comprises five steps: problem definition, momentum policies, dynamic hypotheses, model development, and model analysis. Since the scope of our case study is huge, our analysis will be restricted to generation of dynamic hypotheses and generating insights. A tenet of the standard method is that conclusions and insights should emerge at every step and may emerge at any minute during the standard method.

5.1 Reference Modes

In System Dynamics, reference mode is an important part of problem definition. Reference mode "is a set of graphs and other descriptive data showing the development of the problem over time." [Sterman, 2000][xi] Any problem viewed from the System Dynamics is likely to be first seen in terms of a graph of one or more variables over time. Drawing a reference mode does not require modeler and client to have quantified data, although data can be helpful. "What is required is the tendency to focus on patterns over time: period of increase and decrease, phase relationships among variables, peaks and valleys, and so on." [Richardson, 1981][xii]

Reference Modes from Case 1

I have chosen to drawn reference modes on the following variables:

5.1.1 Revenues and Profits

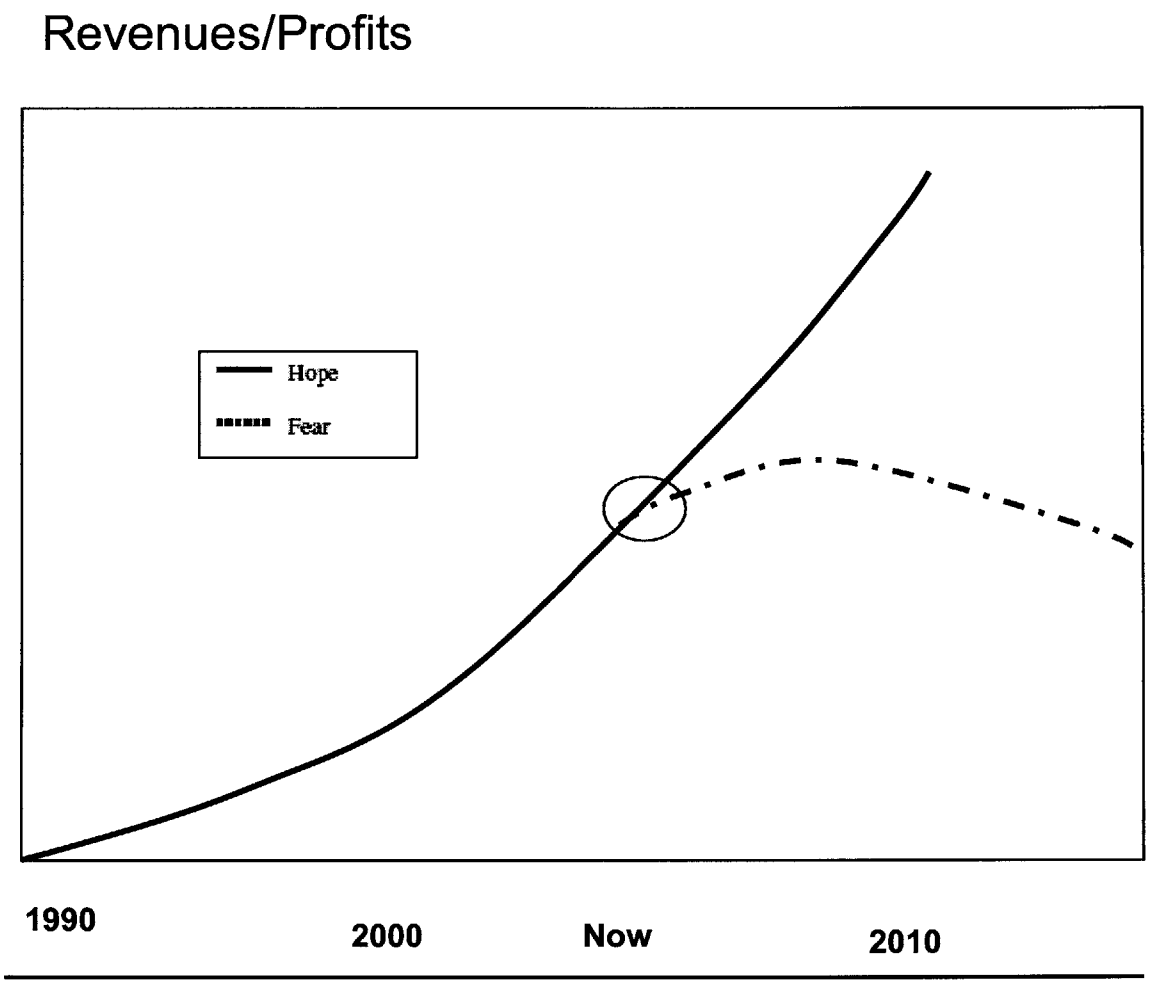


Figure 5. 1 Reference mode for Revenues/Profits

Revenues/Profits: The reference mode for this variable is representative of two other variables namely 'Number of new customers per quarter' and 'Strategic tie-ups with clients' since all three has manifested similar reference modes for the IT outsourcing industry. Revenues and Profitability have been constantly increasing since 1990. The current period (Financial Year 2004-2005) is the time of inflection when the IT outsourcing companies are

facing a check in their growth due to the various factors enumerated in the case study. A circle in the figure highlights the concern. Hope then represents a continuation of the growth and fear a decline.

5.1.2 Consulting Rates

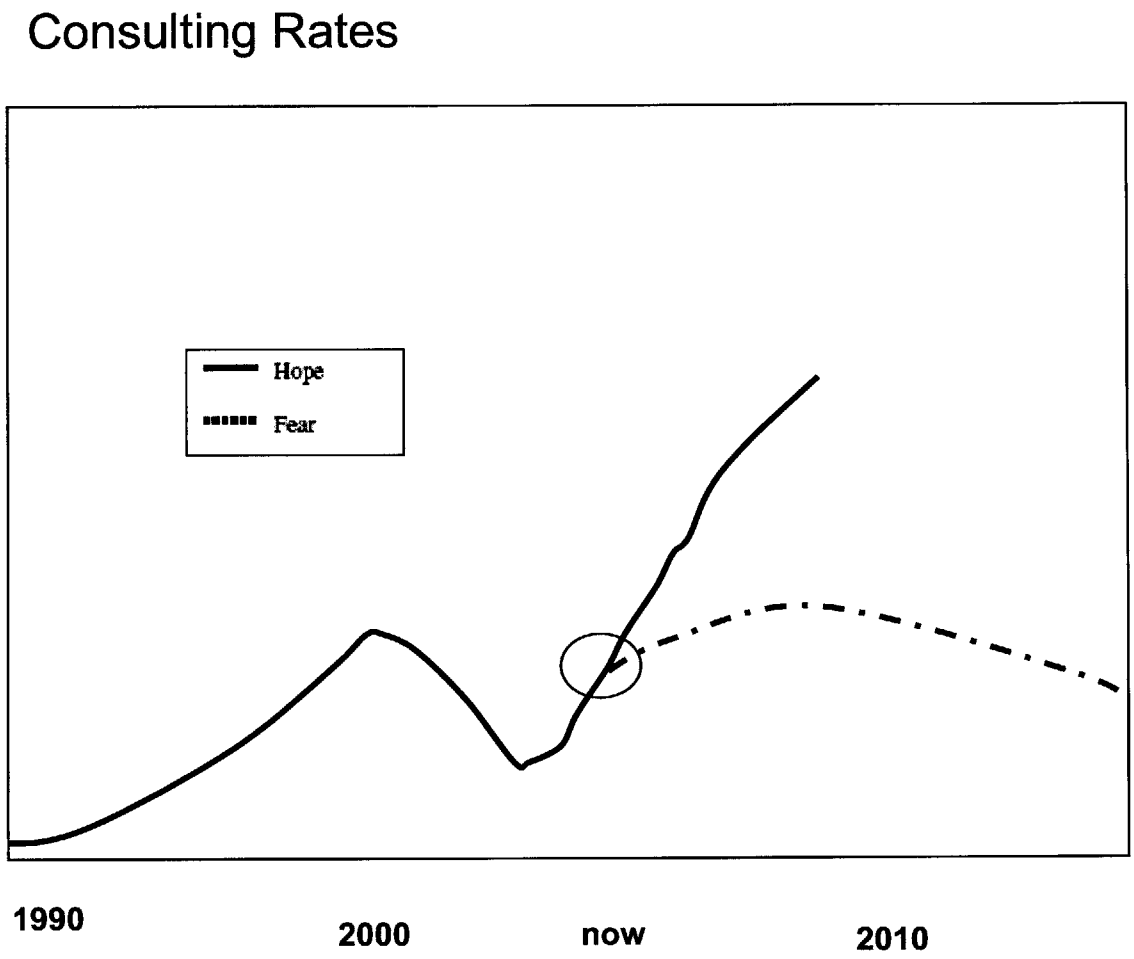


Figure 5. 2 Reference mode for consulting rates

Hourly Consulting Rates: Hourly Consulting Rates went up to an all time high and reached a crescendo during the Internet boom of Year 2000 and then went down drastically only to re-surface slightly. The hope is then that hourly rates will rise over the years and the fear is that they will tank.

5.1.3 Perception of the Company

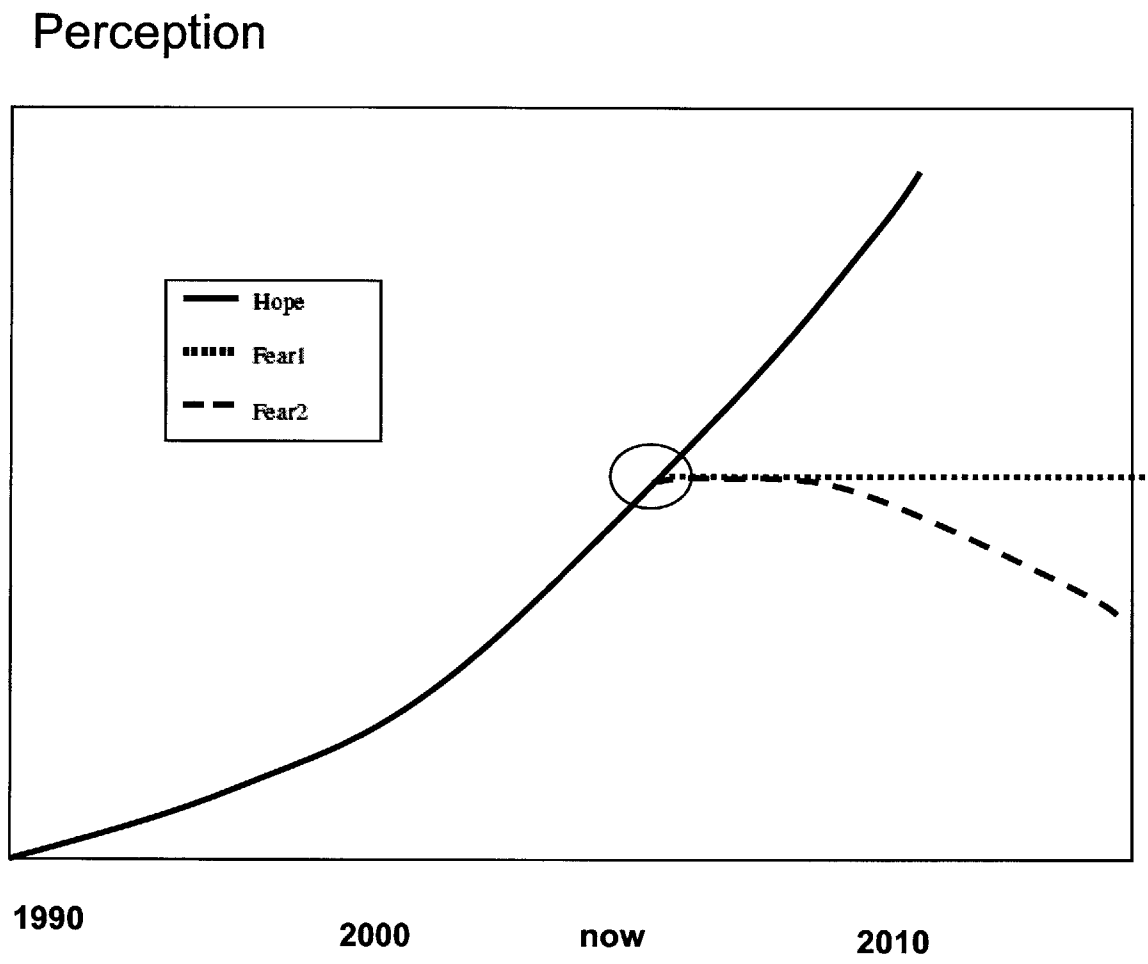


Figure 5. 3 Reference mode for perception of the compnay

Perception of the company: The perception of the company as a global player in the consulting space being able to provide services at all levels of the value chain had risen with addition of several Fortune 500 companies and with addition in the company's array of services. Hope was that the company would grow in perception as a top consulting firm, the

reverse being one of its fears (Fear2). The other fear(Fear1) was that nothing much would happen to lift the company in the perception of its customers despite the efforts spent in marketing the firm.

5.1.4 Effect of Regulations

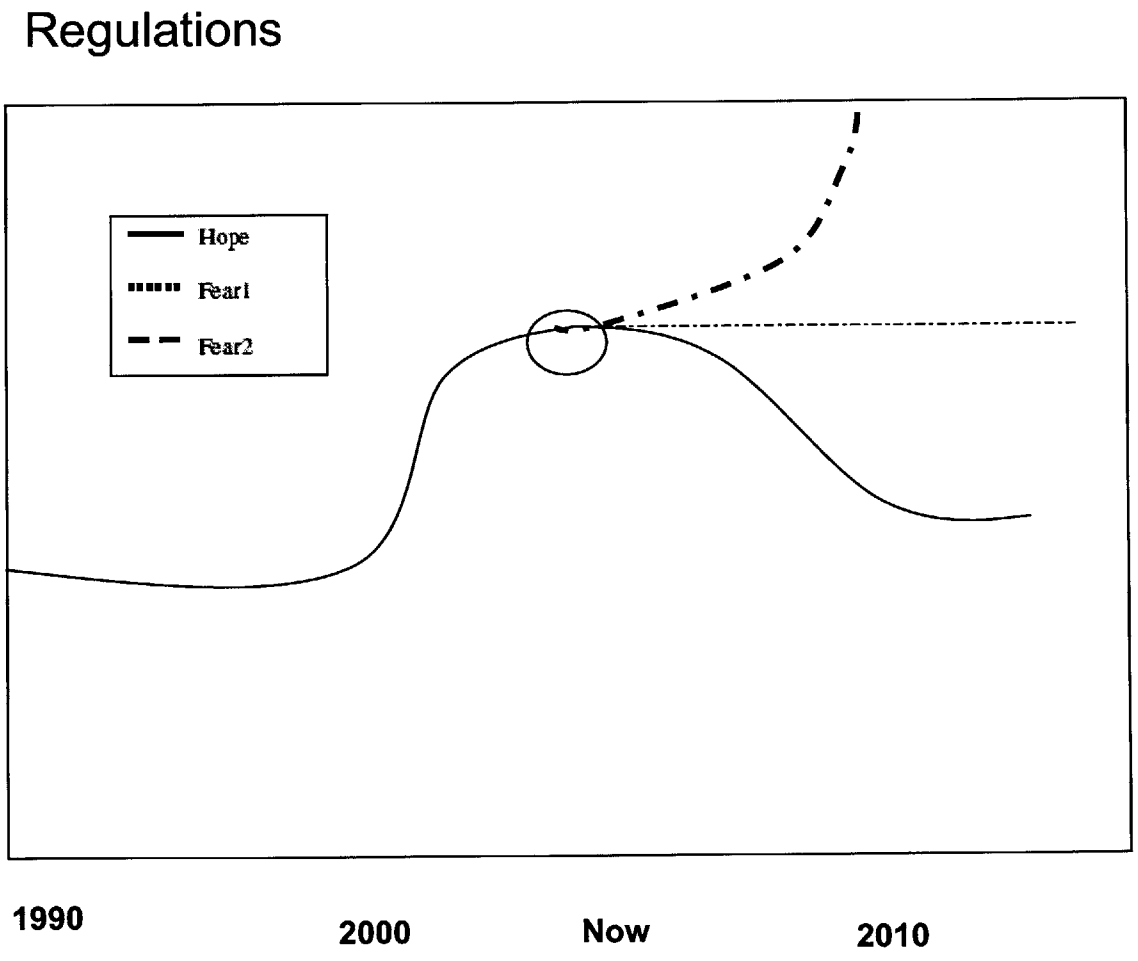


Figure 5. 4 Reference mode for regulations

Regulations: Regulatory bodies on IT outsourcing companies had been a constant before the year 2001 when the year of 911 changed everything with the rising concern for Homeland Security in America. Hope was that the regulatory regimen taken up by the American government would come down with the passage of time. Fear1 and Fear2 respectively was then the fact that the regulatory situation would remain at the same level as the present day or even go higher with the passage of time.

Reference Modes for Case 2

5.1.5 Attrition

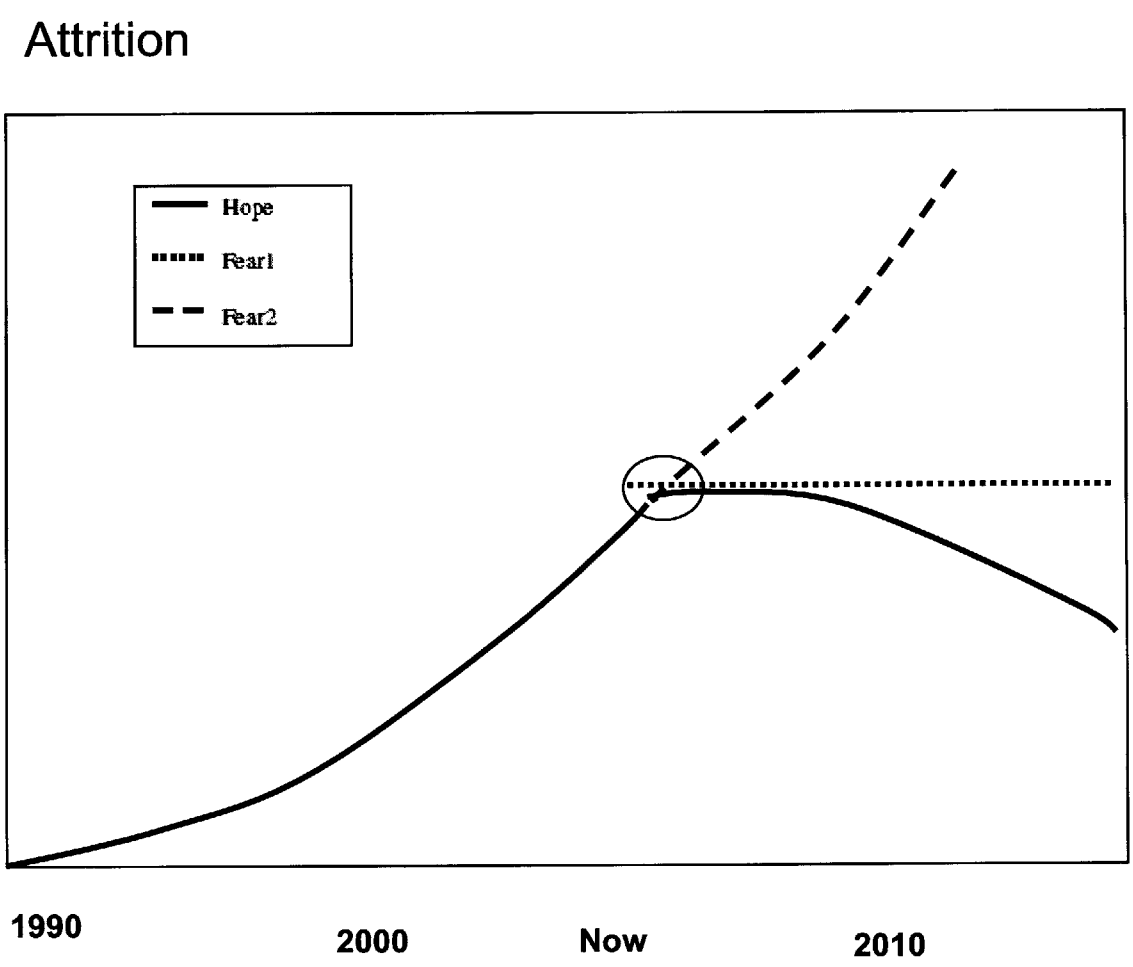


Figure 5. 5 Reference mode for Attrition

With the rise of companies opening shop in offshore and the amount of incentives being offered by these companies, the attrition rate had constantly grown over the years. Hope was that the attrition rate would go down. Fear1 was that the attrition rate would remain at the same levels and fear 2 was that the attrition rate would rise higher.

The reference mode for Cost of Operations would be very similar to that of Attrition. The cost of operation had risen over the years with increased cost of real estate and labor. The hope was that somehow the costs would subside.

5.1.6 Quality of Offshoring Projects

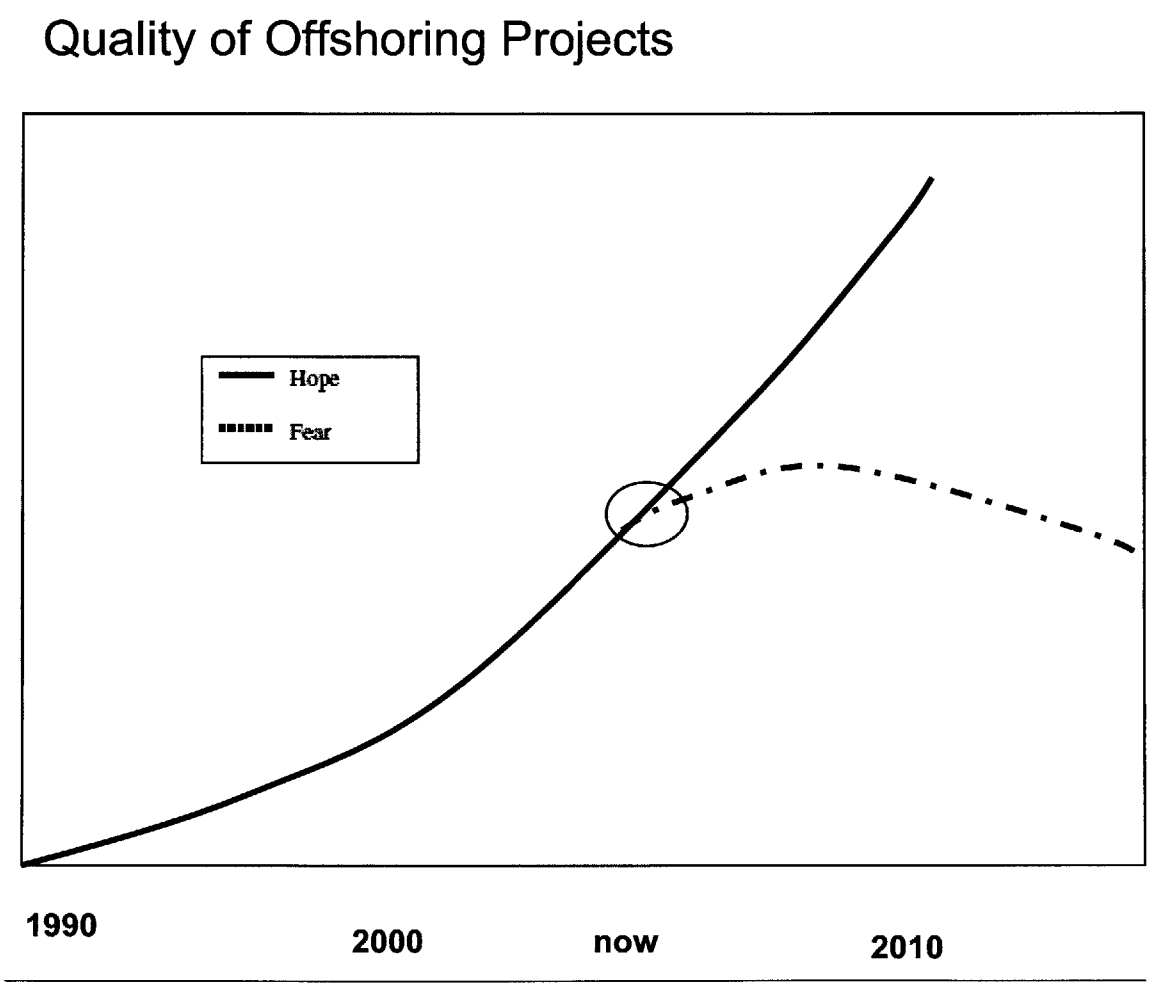


Figure 5. 6 Reference mode for Quality of Offshoring Projects

The major complaint about off shoring projects was that they didn't deliver on quality. With the passage of time and experience of delivering complex projects to Fortune 500 companies, the quality of off shoring projects delivered by SIAS had constantly risen. Hope

then was that the quality of projects delivered from offshore would rise to a level that there would be no difference between them and projects delivered onsite. The fear was that the quality would fall and become egregious enough to become a deterrent for offshoring.

5.2 Momentum Policies

Momentum policies are the policies that a client would adopt now to solve the problem, if decisions had to be made immediately. These are recorded early and may be used to suggest tests or directions of inquiry. It also serves as a yardstick to measure how much value and insight a project can generate.

Momentum Policies from Case 1:

Profitability

- More push of employees to offshore with 30:70 rule to reduce costs in project and thus improve profitability.
- Put a cap on salaries to reduce cost of manpower
- In the case of fixed price projects, underbidding of projects to win more projects and then understaffing them to keep profitability. For time and money projects, dropping hourly rates to win projects.

Perception of the company

- Invest in local infrastructure development in a country to improve local image and prevent backlash
- Hire globally and appoint employees local to geography.
- Invest in college recruitment programs and internships to raise awareness at college levels.
- Acquiring of latest quality and process certifications.
- Strategic tie-ups with Fortune 500 companies.

Attrition rate

- Making employees sign lengthy contracts to force them to stay.
- Using onsite projects as a reward for employees to stay in the company.

Quality of Offshoring Projects

- Quality and business process certifications.
- External and Internal process audits
- Client appraisal and feedback of projects

Cost of Operations

- Outsourcing operations moved to inexpensive destinations

Regulations

- Keep a battery of lawyers to enable smooth functioning of projects despite regulations.

5.3 Dynamic Hypotheses

Dynamic hypotheses are explanations (not solutions) for the reference modes. Dynamic hypotheses have two parts: A structure or process part and a behavior pattern part. Dynamic hypotheses are theories that such and such a structure (or process) *could* contribute to such and such a behavior pattern. [Jim Hines][xiii]

Dynamic Hypothesis for Case Study 1

We take a look at how the dynamic behavior of the various variables can generate the different reference modes.

5.3.1 Marketing

Loop for Vendor's Client List:

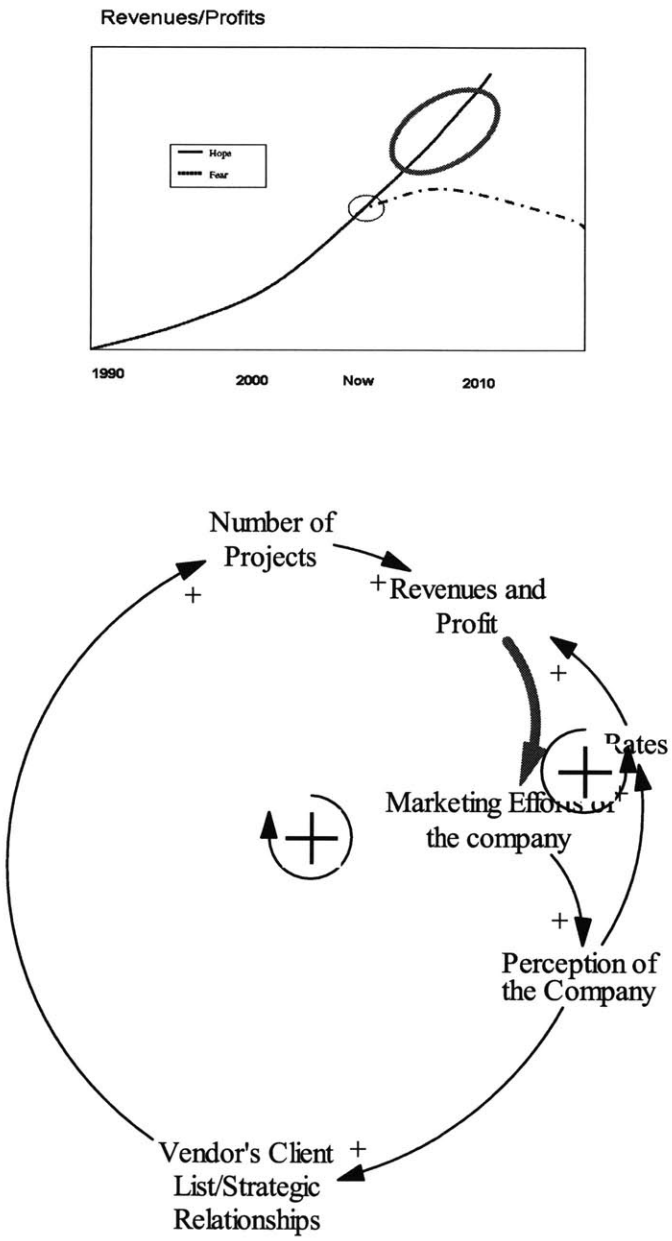


Figure 5. 7 Loop for Vendor's Client List

Keeping in mind the fact that the revenues of SIAS was dependent on two things, the hourly rates charged by the company and the number of projects being executed by the company we examine the factors affecting these variables.

With increasing revenues and profit of SIAS it had more to spend on the Marketing efforts of the company. Once past the initial years of heady growth, it had reached the stage where it was looking for consolidation and long term initiatives to sustain its growth. The primary function of the marketing wing was to establish the image of the company as a high-end provider of IT consulting services. The desired effect was that SIAS could add to their existing client list and also establish long term strategic relationships with existing clients. Since repeat business was a major factor in achieving constant quarterly revenues, strategic relationships with clients was a constant source of generating revenues. Often in strategic partnerships the client would pay part of the costs for office facilities, training of the consultants and for learning its business processes. This then made the switching costs of vendors very high for the clients.

Profits of the company were highly dependent on the consulting rates and were highly related to the perception of a company. With a higher brand image of SIAS it then need not participate in the rates war and command higher rates based on its quality of work.

This then made SIAS the vendor of choice for new clients and preferred vendor for existing customers. The 'hope' curve in the reference mode could be attributed to the behavior of these loops.

Domain expertise was another factor which affected the number of projects won by the company.

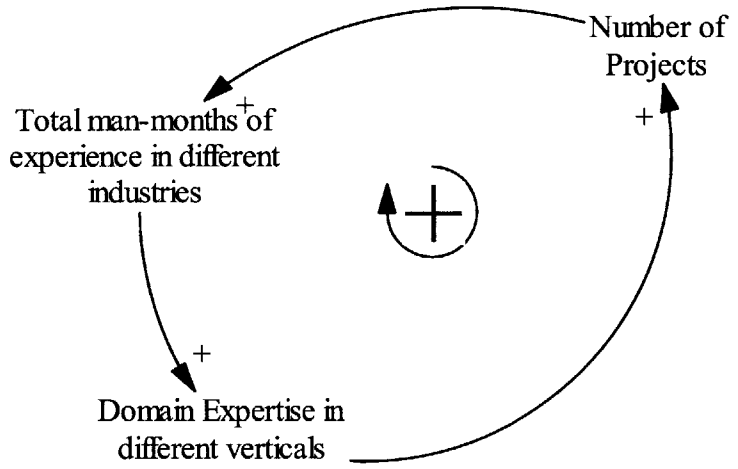


Figure 5. 8 Loop for Vendor's Domain Expertise

Domain Expertise in more number of verticals meant that SIAS could bid for and participate in a higher number of projects. Domain expertise on the other could be accumulated with real experience in executing projects. Having strategic relationships with a client meant that the client would not only give a break to SIAS by allowing it to work in uncharted domains but also train SIAS's staff to do so. Thus SIAS could gain entry into new verticals which they could use to attract new clients and more number of projects. This also contributed to the hope curve of the reference mode for revenues of the company.

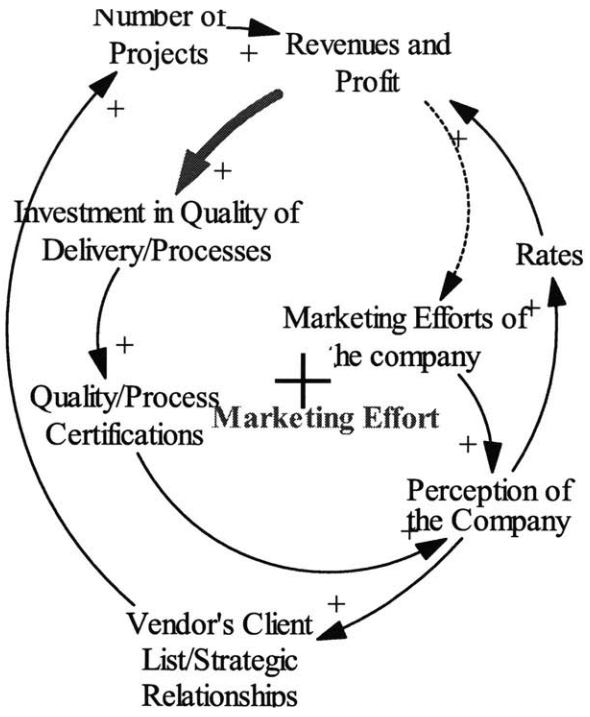


Figure 5. 9 Loop showing effect of investment in quality paradigms

SIAS's revenues had reached that stage where they could invest in expensive quality software delivery and business processes leading to certifications. Certifications increase the brand image of the company and make it more attractive to North American clients as most of these certification bodies are based out of respectable bodies based out of America. Certifications when quoted on Request for Proposals add extra qualifications to the vendor's credentials. As a result SIAS can charge more rates thanks to their expenditure on quality certifications.

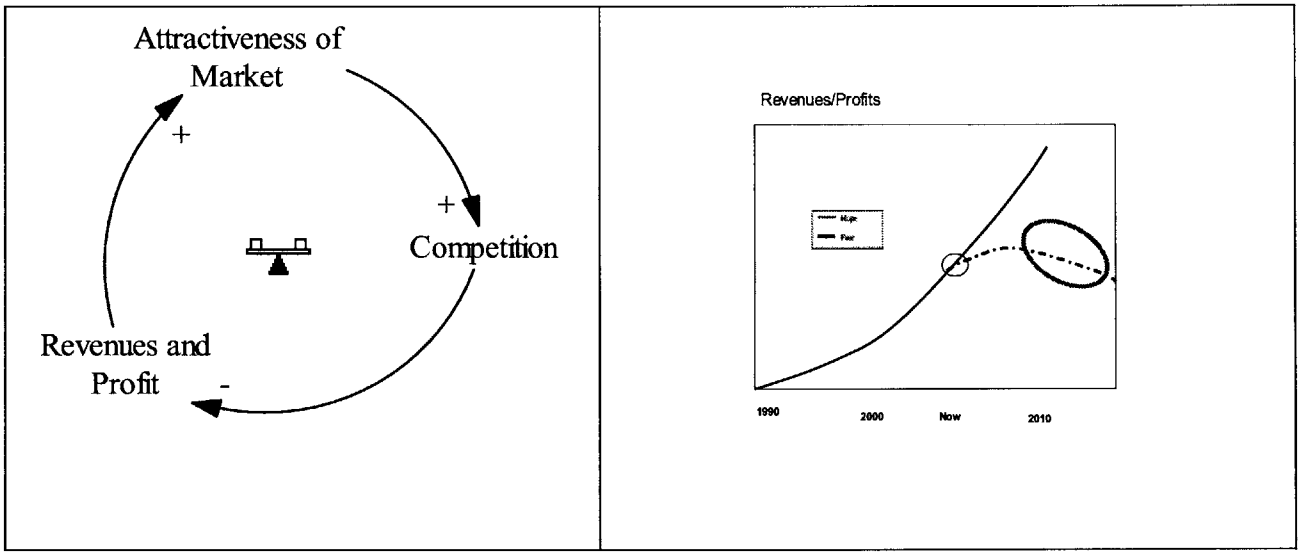


Figure 5. 10 Loop showing effect of Competition

Competition was a factor which was responsible for the fear curve in the reference mode for Revenues/Profits. Enthused by the success of SIAS, there had been several entrants to the IT outsourcing space and with several of them making the mark; there was a tough fight for the same clients and the same revenue sources. More so, the market was tipping from a seller's market to a buyer's market.

"Any competitor with less than one-quarter the share of the largest competitor cannot be an effective competitor".[xiv]

As the number of competitors increase and there is no single entity with a lion' share of the market earning substantial revenues and thus the industry loses its attractiveness. The IT outsourcing industry as a percentage of the IT industry was less than 3% thus this industry could be considered at infancy and thus the fear of competition still contributes to the fear curve of the reference mode before this industry reaches maturity.

The other factor contributing to the fear curve is currency fluctuation.

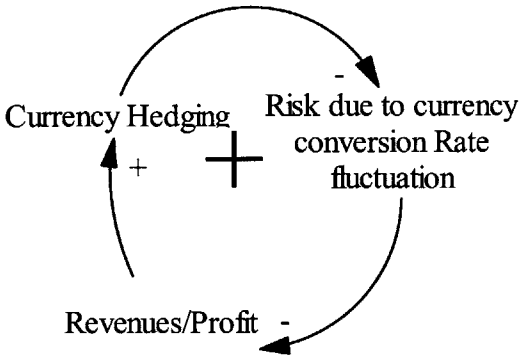


Figure 5. 11 Loop showing effect of risk due to currency conversion rate fluctuation

As most of the revenues from outsourcing are coming in the form of US dollars, SIAS goes in for more and more currency hedging as their revenues goes up. Currency hedging decreases the risk due to currency conversion rate fluctuations. Reducing the risk in turn increases the amount of revenues that can be garnered after realization of its foreign payments. If mismanaged, currency hedging can be a major source of revenue loss.

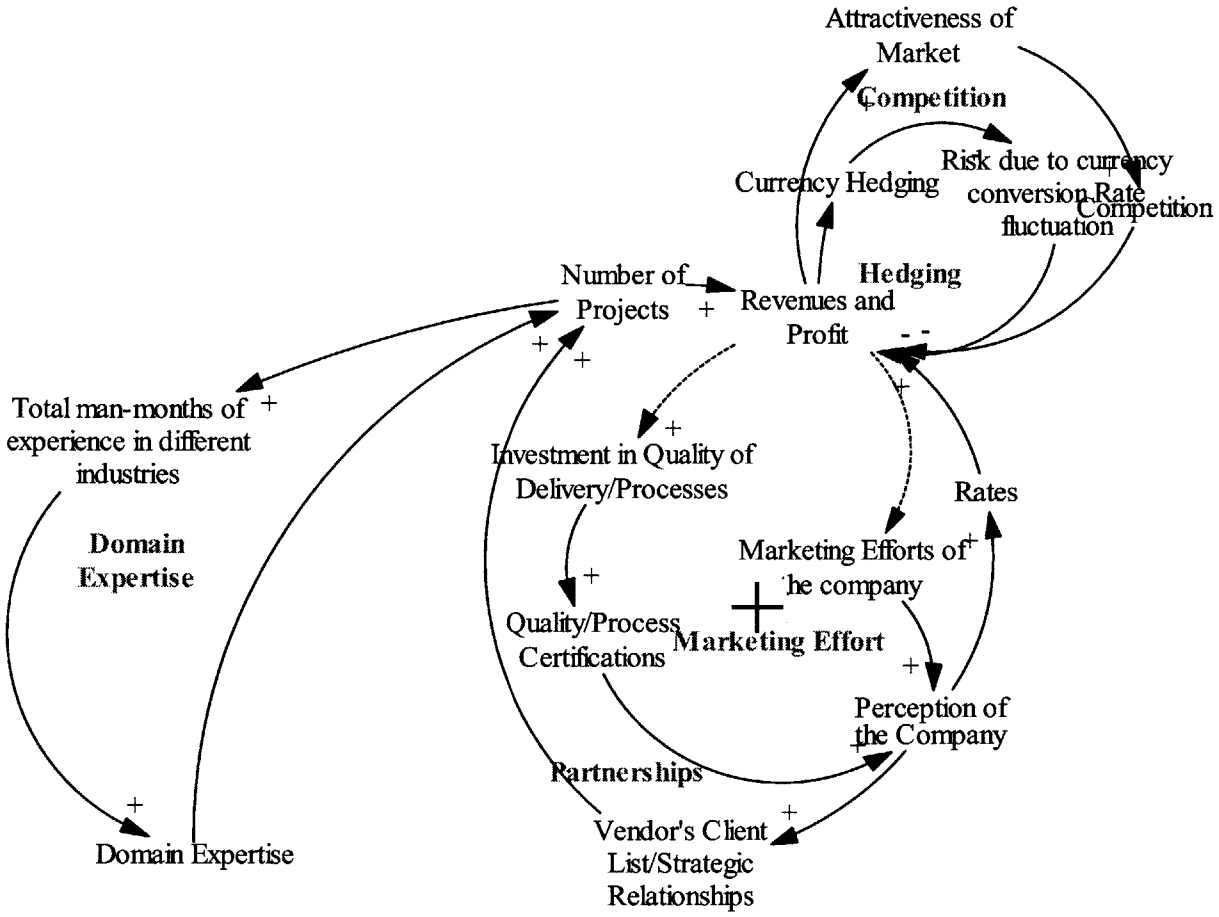


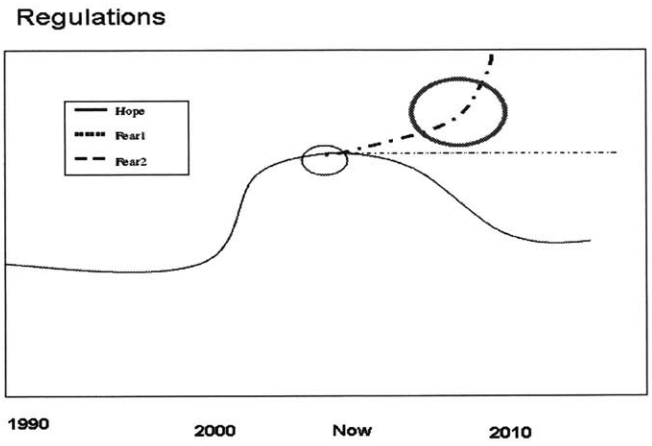
Figure 5. 12 Loops showing aggregate marketing efforts

Insights

- Hourly rates commanded by a company are hugely dependent on the brand image of the company. Lowering rates and underbidding of projects creates pressure on all competitors and the employees and doesn't help the industry as a whole. On the other hand, by increasing the perception about the company higher rates can be earned leading to higher revenues.

- Brand Image builds on old and existing clients and projects of a company and it can also help getting new projects. Partnering with existing clients can help gain new projects from them and also help serve as reference for winning new projects.
  Also as we see later, it can help ease the effect of regulations on off shoring companies.
- Quality and business process certifications such as CMM, ISO etc. add to the perception of a company. However, these certifications should not just be used for gaining perception value but actual improvement of quality of projects and efficiencies in the company which then should lead to improved perception of the company.
- Building up partnerships with blue chip clientele can be used as a publicity medium for gaining brand image.
- Domain expertise was an important factor in gaining new projects as increasingly clients wanted domain experience in the line of business along with IT skills. Thus it made sense to group people both along line of technology and line of business and maintain a matrix of skills. Also it made sense for career management of employees and keeping attrition down.
- The amount of money lost due to global fluctuations in currency was real and had to be managed by risk hedging.

5.3.2 Regulation



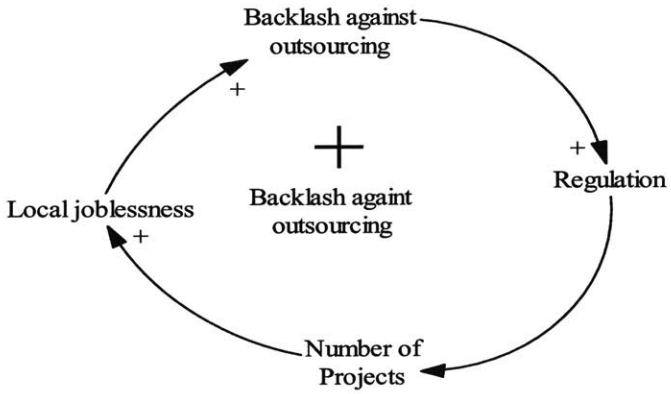
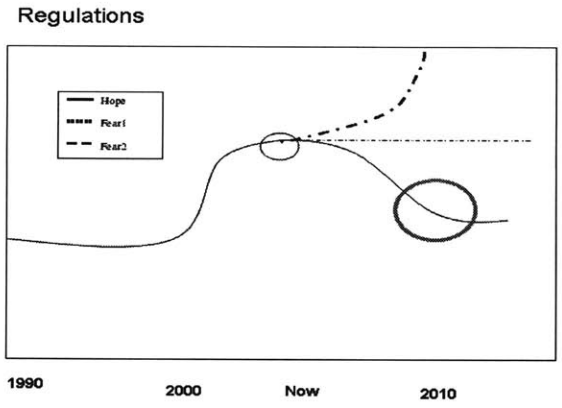


Figure 5. 13 Loop showing effect of backlash affecting regulation

With increasing number of outsourcing projects taking jobs offshore to reduce costs, the local joblessness scenario begins to become tangibly painful finally resulting in backlash against outsourcing. Backlash starts with disgruntled individuals who then join to form groups which then try to seek answers to their problems in representation in public spaces and media, their ultimate aim being that their issues are addressed. This in turn drives

legislation bodies to raise the levels of regulation for the outsourcing companies. Examples of past regulatory activities by the US government have been IP export regulations and compliance regulations. An increasing number of regulations means that a fewer number of projects can actually meet the standards of the regulations and thus contributing to the fear reference mode for regulations.



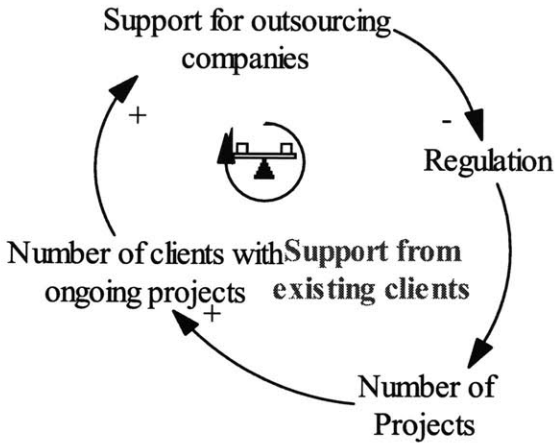
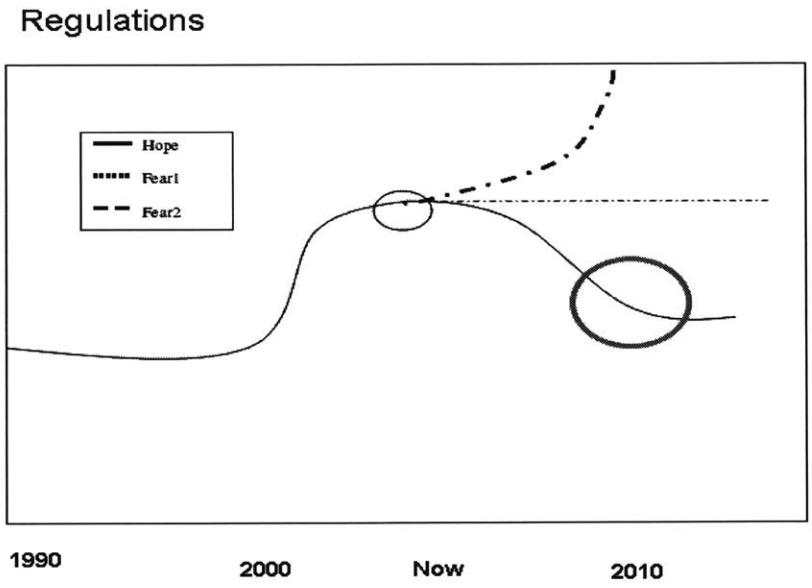


Figure 5. 14 Loop showing effect of support from existing clients against regulation

IT outsourcing companies with a huge client base in the US are at a distinct advantage as far as regulation goes. Clients with ongoing projects with IT outsourcing companies stand to lose if regulations are passed against these companies as their businesses are disrupted by such actions. Thus they in turn lobby for fewer regulations against IT outsourcing companies and if these companies are blue chip companies and major contributors to the economy the amount of influence they have on the regulatory bodies is immense. This then contributes to the hope curve of the reference mode for regulation.



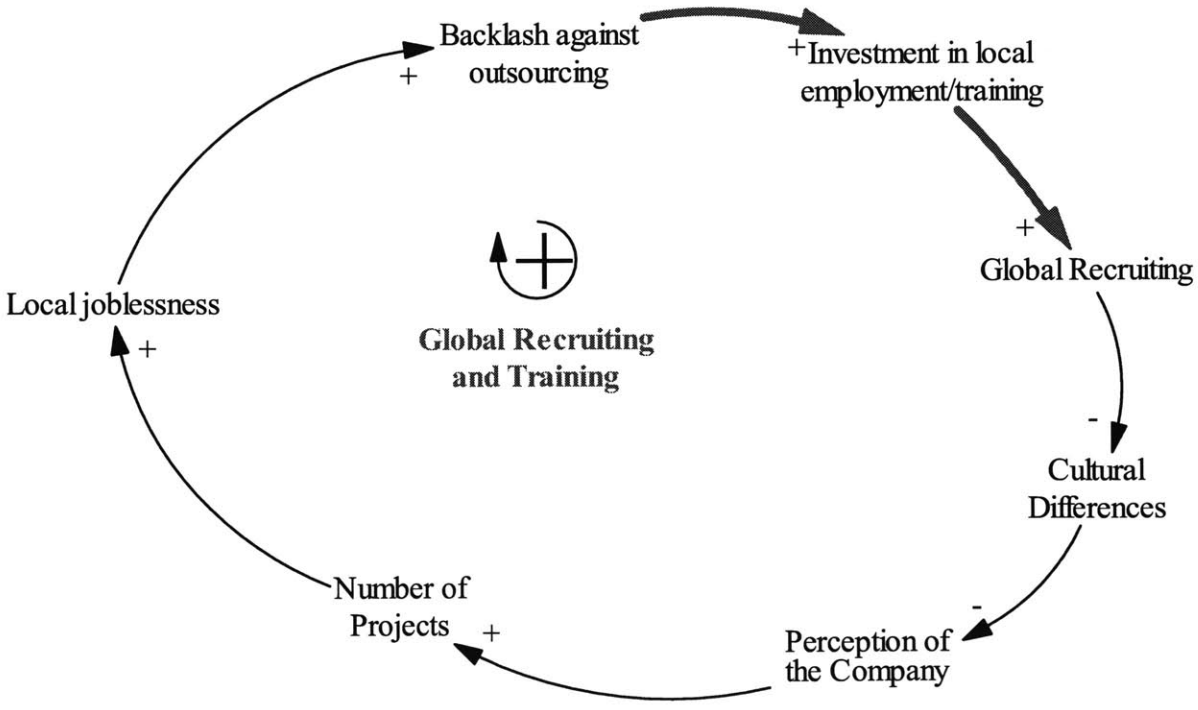


Figure 5. 15 Loop showing effect of global recruiting in the company

Investment in Local Employment and Training reduces the backlash against the outsourcing company as it hires more from the local employee pool reducing the unemployment pool. Adding local talent to the company reduces the cultural differences posed to the client which then increases the overall perception level about the company bringing in more number of projects. Thus with investment in development of local resources the company overcomes the backlash and thus regulation and also adds to perception of the company as a global IT consulting firm gaining more projects which then affects its revenues.

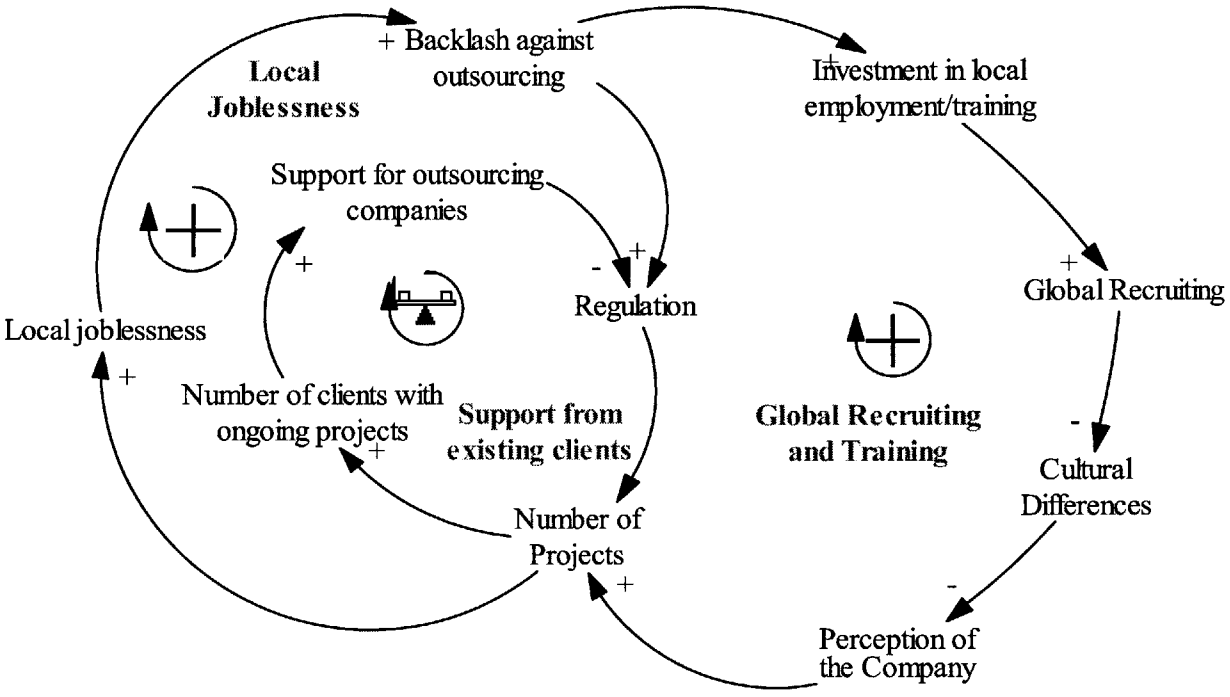


Figure 5. 16 Loops showing aggregate effects of regulation

Insights

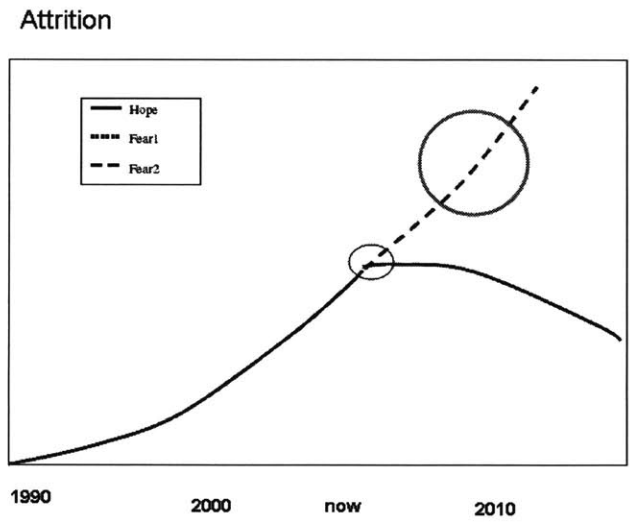
- Off shoring induces local job cutting which invokes backlash of the unemployed which directly or indirectly leads to regulation.
- The current momentum policy of SIAS was to have a battery of lawyers who would manage the regulation front by making sure that the company was compliant with the regulations imposed and to find loopholes in the existing regulations that could be taken advantage of. This was a reactive measure to regulations. The other measure should have been the pro-active one, that of avoiding the causes that makes the company prone to regulations.
- Investing in the local economy in the form of providing training, re-employment of unemployed people avoids backlash and makes it more likely to gain sanctions against being regulated upon. Also preferential treatment from local governments in the form of subsidized real estate and other grants result.

  The brand image of a company is built up not only by the projects executed by the company but by instituting itself as a cultural icon. Companies sponsoring research grants and prizes at renowned universities are good examples
- Hiring of local employees adds a global element to the company which then reduces cultural differences with clients. This helps improve the perception of the company as a global player. . Hiring locally from a country adds to the brand image of a company as it is not considered a pure offshore player. A company with the employee facing layer from the same country reduces the perception of cultural differences with the client. Such companies then are not considered purely on cost basis and thus are not considered purely

on the rates war front. Thus all momentum policies advocating investment in local training and hiring should be recommended.

- Influential clients of a company with ongoing projects with a vendor can prove as effective collateral for lobbying against government regulations. Thus an effort should be made to develop relationships with clients above and beyond the boundaries of the project to lasting partnerships.

5.3.3 Attrition



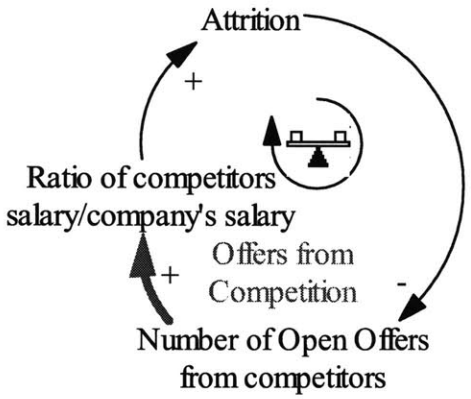


Figure 5. 17 Loop showing attrition due to offers from competitors

For SIAS the great number of offshoring companies setting up shop in India posed both a threat of lost revenues and increasing attrition. With the increasing number of companies

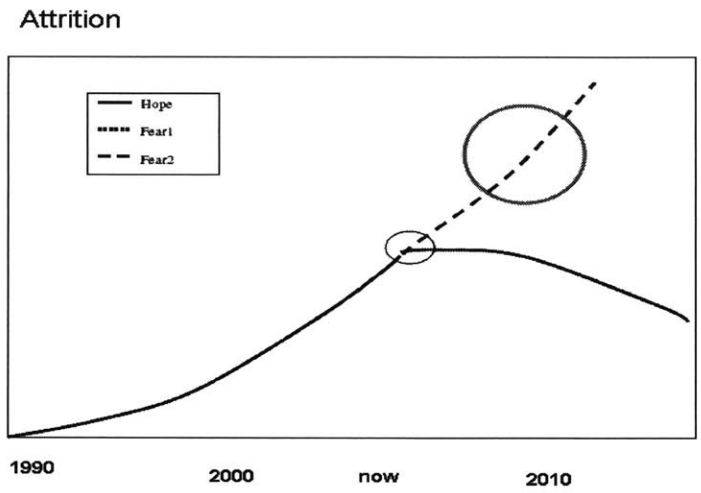
opening shop in India, employees had a lot of options. When the demand for resources of a particular skill-set was hot, it was common practice from companies who had newly started services offshore to ramp up their strength by offering very attractive offers to the desired employees from other companies.

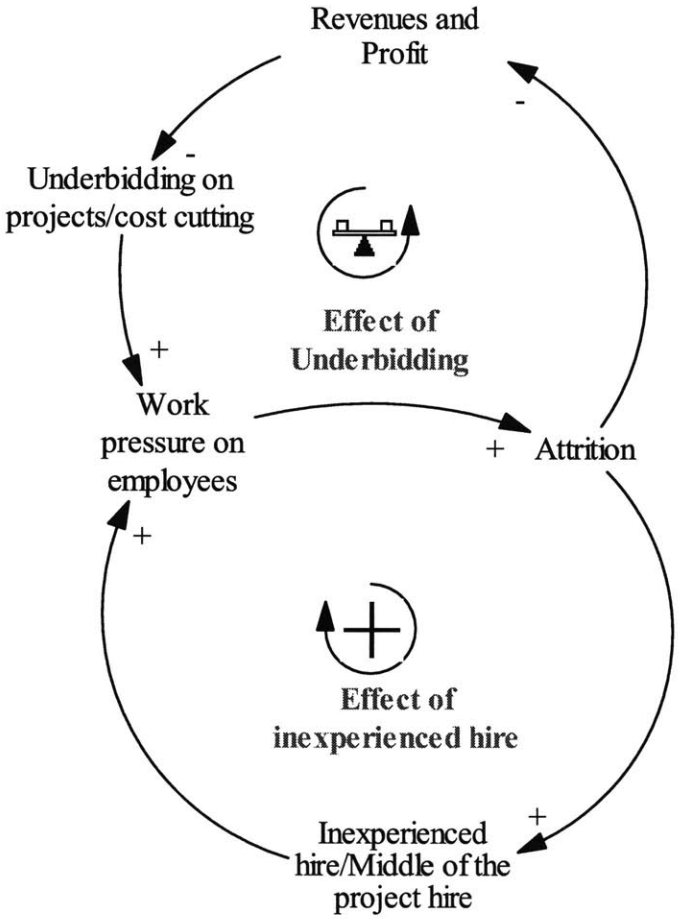
As the number of open positions were filled up and there were less number of open job offers, jobs with high salaries went down and attrition came down. Thus entrance of a new competitor would mark its way with hiring of employees from other companies at higher salaries and contribute to the fear curve in the reference mode. With capacity fulfillment in the IT offshoring space as low as 3%, there were chances of new entrants to the field and thus it still contributed to the fear factor in the future.

Attractive offers from the competition constitute some of the external factors responsible for attrition. Now we look at some of the internal factors causing attrition such as underbidding of projects and inexperienced and middle of projects hiring both of which causes higher work pressure on the employees and thus encourages him/her to look for greener pastures outside.

As managers are under the struggle to gain projects against high price competition, they underbid projects and then under-staff to justify the low cost of bidding, but as we see the effect of overloading employees results in higher attrition. The next step by companies usually is to hire new employees to replace the employees who left. Usually since it is very difficult to find a new employee with the exact same skill-set as required in the project and seldom someone with knowledge about the business aspect of the project, a learning curve is involved with a middle of the project hire which puts pressure on the other employees in the project which again drives people to attrition. Thus we see that in an effort to generate

more revenues by winning projects by underbidding on price, companies can actually lose more money in the long run due to loss of employee satisfaction leading to attrition.


Attrition
Hope
Fear1
Fear2
1990
2000
now
2010


Revenues and Profit
-
Underbidding on projects/cost cutting
-
Effect of Underbidding
+
Work pressure on employees
+
Attrition
+
Effect of inexperienced hire
+
Inexperienced hire/Middle of the project hire

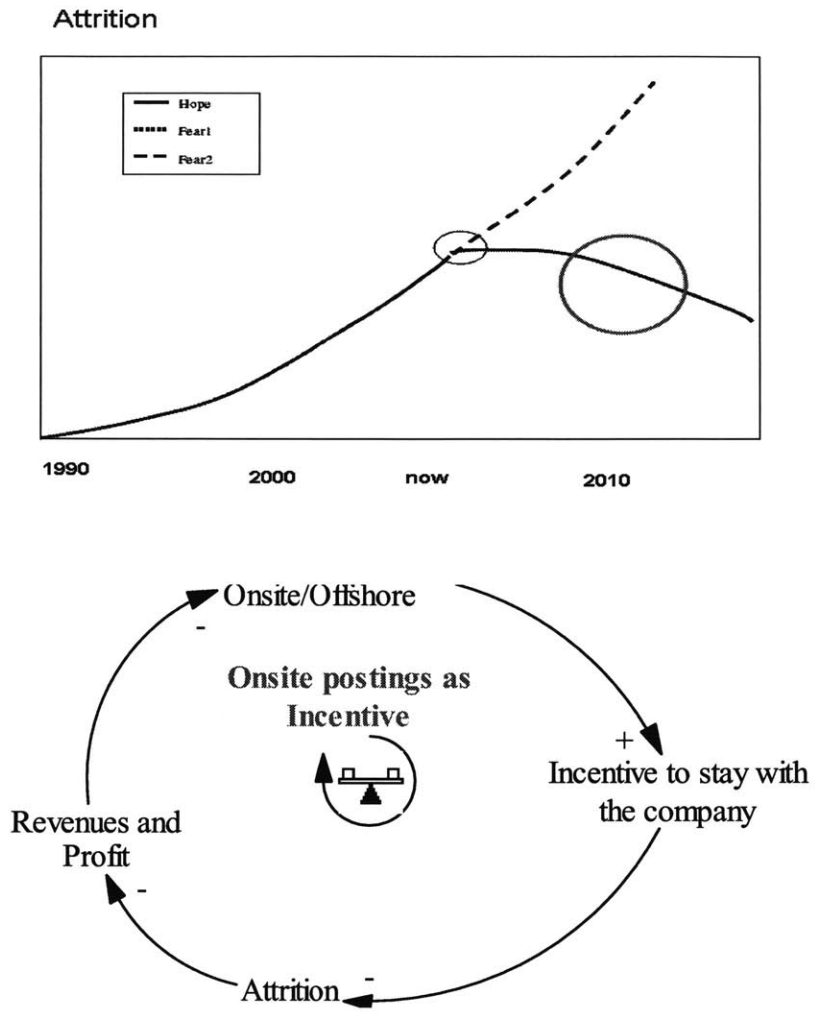


Figure 5. 18 Loop for showing onsite postings as incentive to avoid attrition

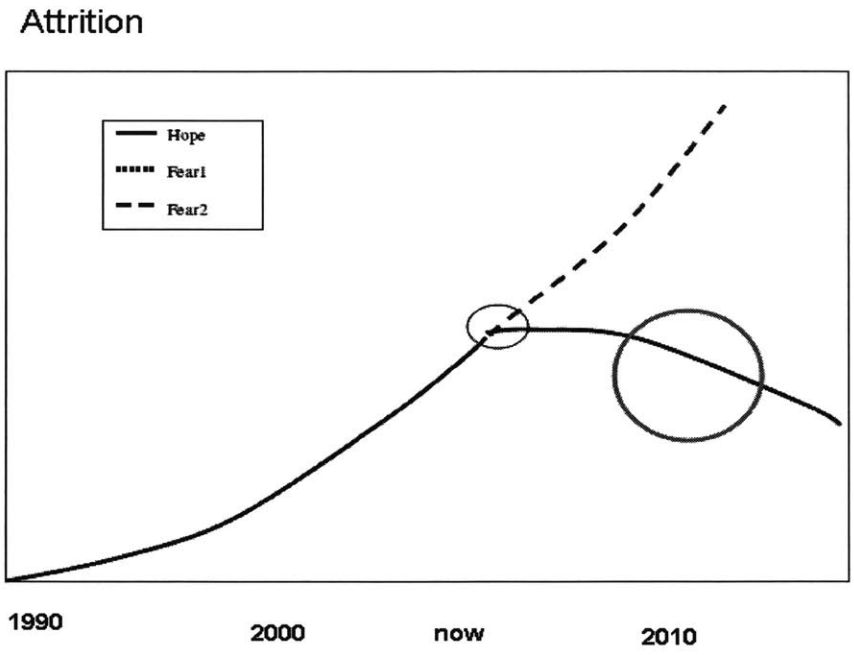
Next we take a look at the factors generating the hope curves in the reference modes for attrition. SIAS uses onsite postings (where people have the opportunity to earn in foreign currencies) as incentives to the employees. But in order to increase profitability of the company, SIAS was enforcing a 30:70 rule whereby a ratio of 30:70 onsite: offshore ratio would be maintained. With further plans to reduce this ratio to 20:80, the incentive to the

employees would take a beating and with very little onsite chances, employees would straightaway start comparing SIAS's salaries to what was being offered by competitors resulting in higher attrition rates. A proper onsite/offshore ratio had been one of the reasons that SIAS had successfully kept its attrition low even during the Internet boom and managing the ratio properly was key to the hope curve of the reference mode.

Career Management is a measure to manage the attrition and thus contribute to the hope curve of the reference mode for attrition. As mentioned in the case SIAS had a well maintained line of business but was weak on the line of technology front. Senior skilled personnel had a choice either to move to the business side of the firm or jump ship to other companies where their enhanced technical skills would be more valued.

A model wherein the technical skills could be harnessed and developed, would, as pointed out in the causal loop diagram provide an incentive to stay with the company.

Thus SIAS needed an effective career management solution, wherein the careers of each employee would be charted out with the help of the employee to build a career map for his/her stay within the company. All this would provide the employee with a sense of direction within the company and that would be an incentive to stay in the company and work towards achieving the goals charted out. That then provides some hope for the attrition reference mode.



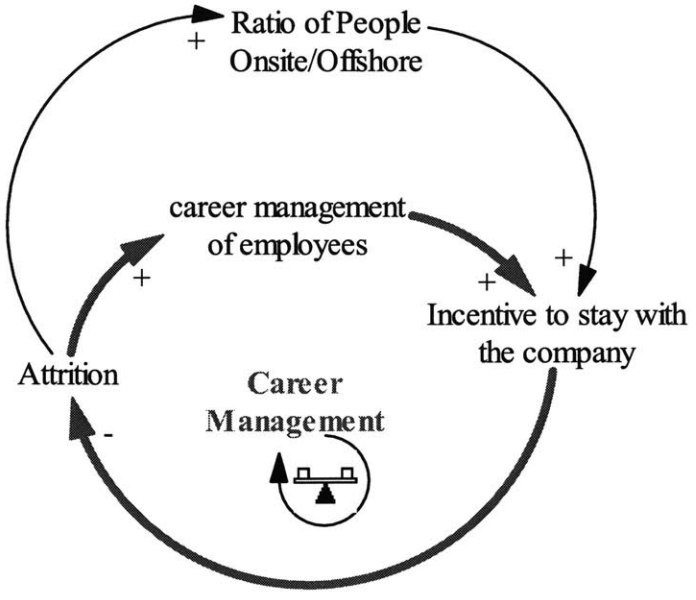


Figure 5. 19 Loops showing effect of career management and ratio of onsite/offshore on attrition

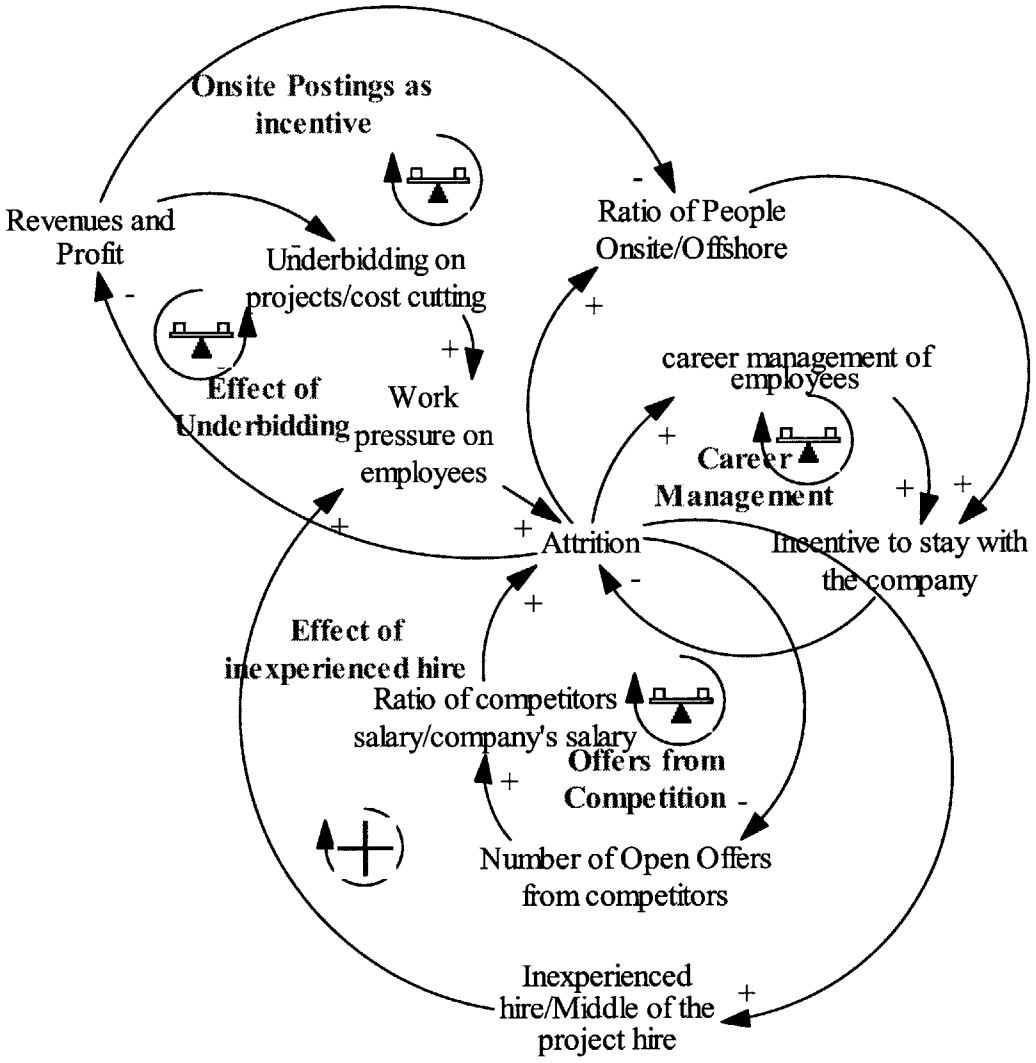


Figure 5. 20 Loops showing aggregate effect on attrition

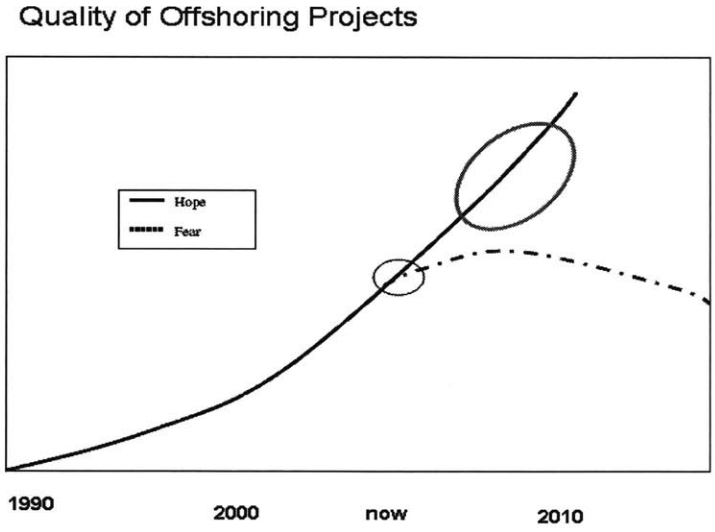
Insights

- Opportunity to work onsite can be used as an effective incentive for checking attrition. This not only helps the employees monetarily but travel provides a break from the monotony of a project. Since most employees do not want to migrate to a foreign country but may wish to work temporarily abroad, this measure can be used in a big way to offset the salary war posed by competitor's lucrative offers. Managing the onsite/offshore ratio also reduces the work pressure on employees, as offshore/onsite communication is eased

with different people having to different things. A healthy onsite offshore ratio also helps improve vendor client communications. Thus the momentum policy advocating onsite postings for reducing attrition should be recommended. On the other hand, trying to reduce attrition by making employees sign lengthy contracts keep employees against their will and thus puts pressure on employees which then doesn't reduce long term reduce attrition and drop in employee productivity.

- Underbidding of projects leads to higher pressure on employees, higher attrition rates and lower quality of projects. This momentum policy should not be recommended.
- Career Management is a very important step in checking attrition. Creation of separate lines of business and lines of technology for career growth would help avoid frustration in employees and thus check attrition. Careful monitoring of individual careers of employees with yearly adjustment to market salaries would help check attrition.
- There is a jump in attrition with entrance of new competitors in the market but the effect is balanced out with the number of open positions falling in the long run. However, the salary levels which get raised during peak times of attrition, doesn't come down with falling attrition levels. Thus checking attrition in the first place is better than responding to competitor's offers to the employees with counter offers at the time of exit from the company.
- Attrition creates more pressure on remaining employees making them prone to leave as well. Attrition costs more to the company in the long run than the gain from policies which cause attrition. Thus momentum policies such as putting a ceiling on employee salaries etc. should not be imposed as the long term effect of attrition is more detrimental than the costs involved avoiding it.

5.3.4 Quality



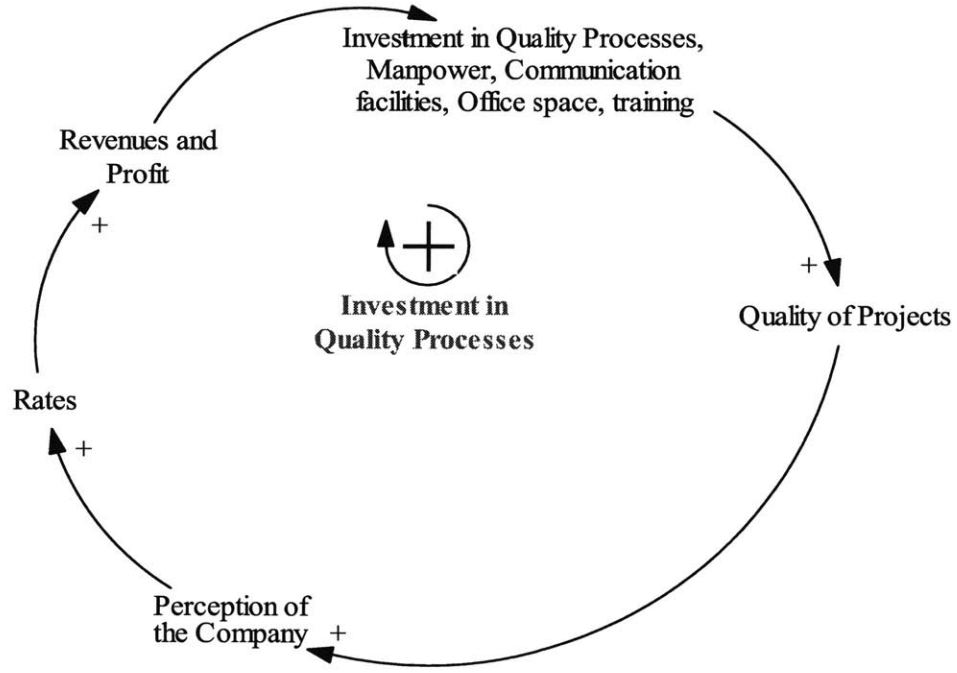
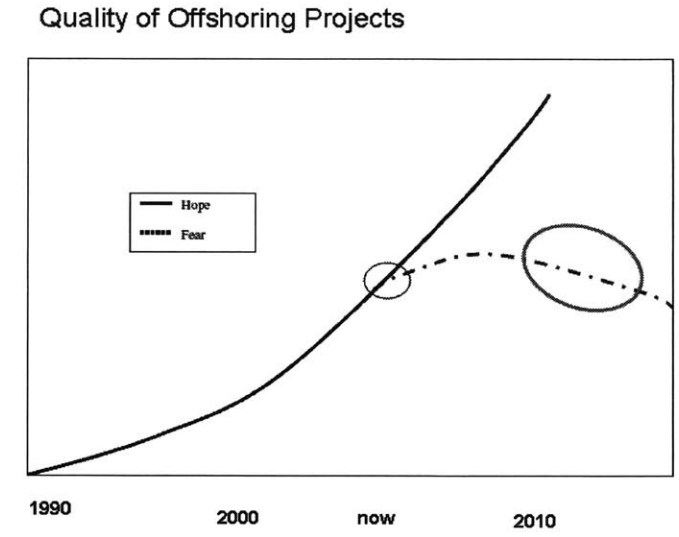


Figure 5. 21 Loop showing effect of investment in quality processes on quality

Increasing revenues and profitability allows SIAS to spend more on Quality processes, manpower, training, communication facilities, better office space and facilities. This is a measure to sustain the growth of the company. Investment in Quality of projects leads to adoption of better processes for doing work; cuts down re-work and helps identify and eliminate risks in a systematic manner. This also leads to award of certifications which are then quoted on all project proposals and project functions. In all, these lead to improved perception about the company in the eyes of the customer which then leads to higher rates and more projects for the company. With continued success, the company can then spend on the latest certifications and keep itself abreast with the market in terms of quality certifications.

Next we take a look at what contributes to the fear factor of the quality reference mode.



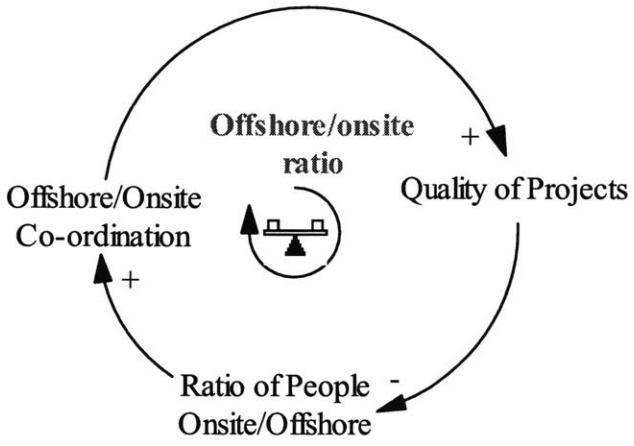


Figure 5. 22 Effect of onsite/offshore ratio on Quality of Projects

The onsite: offshore ratio was key in the quality of offshoring projects. With more number of people onsite than offshore, communication between client and team members and between team-members were better. But a higher onsite: offshore ratio was a luxury to off shoring companies as it meant lower profits from the projects. With a constant pressure from higher management to reduce the onsite: offshore ratio, SIAS was forced to reduce the ratio whenever they felt that the quality of projects being delivered was at the desired level.

A thin presence onsite meant that the same set of people had to liaise with the clients as well as maintain onsite/offshore communications for effective functioning of the projects. Thus with the increasing push towards lowering the onsite/offshore ratio throughout the company, the fear factor in the reference mode for quality was imminent.

Insights

- Quality of projects is essential in building the brand image of the company which then results in higher rates and hence higher revenues. Companies as they mature spend more and more on quality departments. Quality departments in order to justify the increased spending invest in paradigms without being totally sure about how the long term effects on the company. Also adopting new quality paradigms without getting rid of older ones mean that employees have to put in extra hours for updating the required documentation for the various processes. Thus although quality certifications can improve the perception of the company, unwanted quality paradigms can provide only perception value as opposed to value added quality processes which not only improve perception value of the company but also the efficiency of the company.
- Apart from a few client satisfaction ratings there were few objective measures for gauging the quality of offsite onsite effectiveness. Since the ratio of onsite: offshore employees greatly affects the quality of off shoring projects, it should not be arbitrarily set as a fixed number like 30:70 but decided upon on a more objective measure of factors such as the quality of projects delivered, onsite/offshore communications and the client experience. Thus along with the momentum policy of having client satisfaction ratings,

there should be a more elaborate process for gauging the quality of project from the client's point of view.

- Quality often comes with investments in better training, facilities, superior manpower etc which increases cost of operations and thus providing a balancing condition. But the tipping point between the cost of quality and the advantages of investment in quality has to be decided.

5.3.5 Cost of Operations

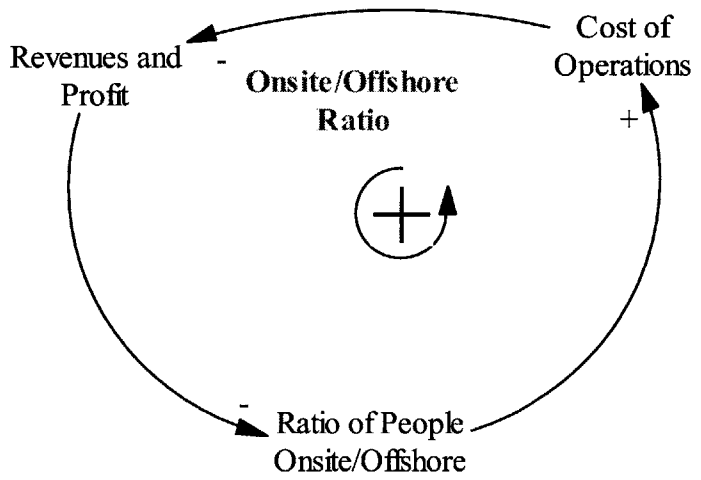


Figure 5. 23 Effect of Onsite/Offshore ratio on cost of operations

As discussed before to increase profitability from projects SIAS was constantly trying to lower the onsite/offshore ratio which then lowered the cost of operations and in turn increased profitability. This was the measure that SIAS had opted for to lower the cost of operations.

Closely linked with earning greater revenues for the company is the amount of money invested in improving quality processes, manpower etc. This then increases the cost of operations which then hurts the overall profitability of the company. Thus increasing spending on infrastructure costs, quality and manpower on the one hand increases the revenues of the company but decreases the total profitability of the company. As the cost of real estate, salaries of skilled professional etc. were constantly increasing; this could lead to destruction of the economic comparative cost advantage that made off shoring lucrative in the first place.

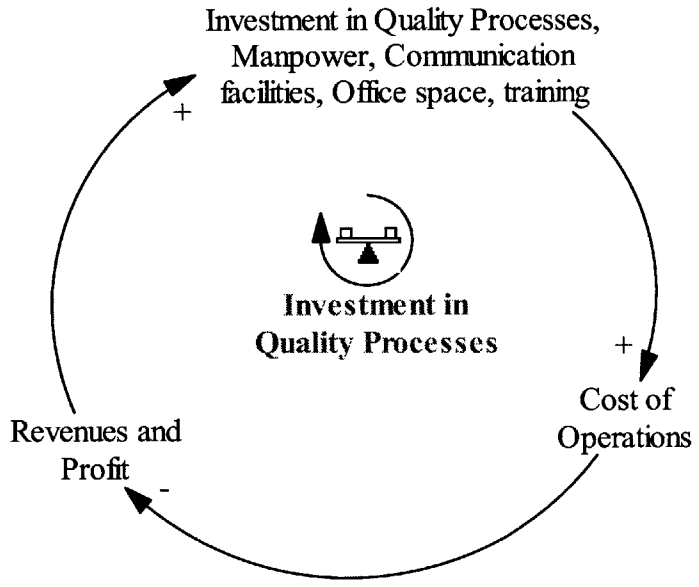


Figure 5. 24 Effect of investment in quality processes etc. on cost of operations

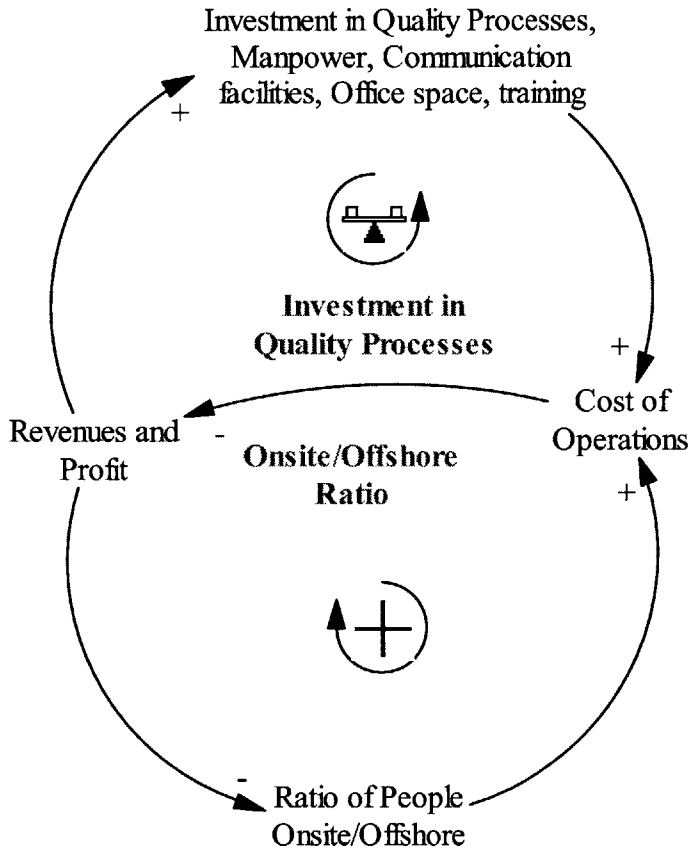


Figure 5. 25 Loops showing aggregate effect on Cost of Operations

Insights

- Maintaining a lower onsite/ offshore ratio reduced the cost of operations but not without repercussions. The onsite/offshore ratio affected the rate of attrition and also the quality of projects delivered. Thus reducing the onsite/offshore ratio carte blanche wouldn't help the company's revenues in the long run.
- Investments in quality processes and other measures to improve the functioning of the company are made with a view to increase revenue in the long run. Investing in new quality paradigms which may not be an absolute fit for the company may improve the perception about the company but may reduce employee morale and efficiency of doing work. Thus all investments may not justify their costs. As most offshoring companies are clustered around few major cities, the cost of operations due to high rents, labor rates etc tend to skyrocket in these cities. Development of infrastructure in mid-level towns and cities and relocating staff to these places reduces the cost of operations for the company and also provides incentive to the employees in the form of higher real wages in lower cost cities.

- Investment in technology(example VOIP) that leads to low cost communication and collaboration between teams at diverse geographical locations can reduce cost of travel and communication.

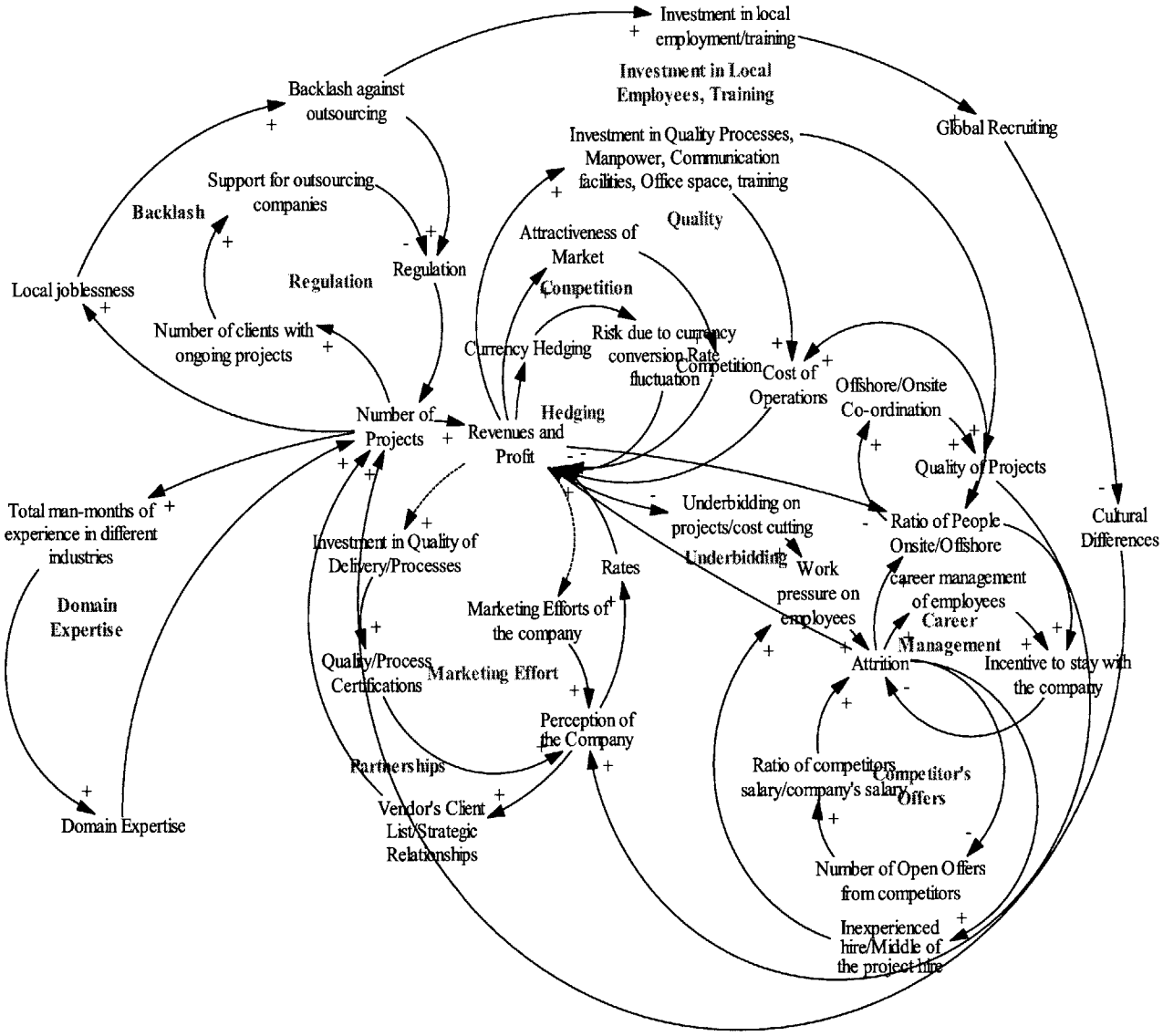


Figure 5. 26 Loops showing synthesis of all loops affecting offshoring/outsourcing

A synthesis of all the dynamic hypotheses considered gives us the above figure which shows how all of these different factors are inter-connected and affect each other.

5.6 Recommendations

- New projects and new clients can be won by building the perception about the company, building on existing relationships with clients and delivering quality projects. A better perception about the company can help avoid participating in the death spiral of lower rates leading to understaffing and underbidding. Garnering the increasing experience level in the company by maintaining and developing the domain level and skills level matrix will help the company not only provide IT services on different industry domains but also navigate across different levels of the consulting services pyramid. This will also open up opportunities for employees on both Lines of Business and Technology and would help better manage employee aspirations thus checking attrition.
- Understaffing and underbidding for projects won't add to the profitability of the company in the long run. In the long run, this will increase attrition and falling quality of services will affect brand image and thus revenues.
- Onsite/Offshore ratios such as the 30/70 ratio shouldn't be arbitrarily decided or implemented company wise, rather on a case by case basis depending on the complexity, size and nature of the project.
- Implementation of latest communication tools and techniques can save a company a lot in the form of duplication of information, authentication of information, knowledge transfer from remote locations, immature requirements gathering leading to rework in projects.
- Quality and business certifications can both be a bane and a boon. When used in spirit they can improve quality of projects, reduce rework, remove

ambiguities, and escalate issues at the correct time and save projects from overshooting on time. On the other hand when used only in letter and not in spirit these Quality processes become a bundle of documentation and thus a pain for the employees whose job it is to have these filled other than their normal job.

- Keeping a client-facing management team hired from the local country provides a seamless interface to the client and allows IT outsourcing companies to function without being affected by cultural differences. This also improves the brand image of the company as a global company.

- Regulation can be done away with, in a natural way. By contributing to the country in which an outsourcing/off shoring company is doing business, by contributing to the jobs in its economy, an outsourcing/off shoring company becomes a welcome member of society without attracting public backlash. By hiring employees globally, an outsourcing company not only bridges the cultural differences with its clients effectively, it can overcome visa issues, annual quotas on work visas etc.

APPENDIX

Appendix A

Professor Jim Hines

The "Standard Method"[1]

[1] Prepared by Jim Hines, February 1999. Revised February 2001. Revised February 2004.

What is the "standard method"? The standard method is the sequence of activities (or the process) most teams will follow in doing their projects. Each week you will receive a handout describing the particular step of the standard method that you should be working on with your client.

We encourage you to stay as close to the standard method as you can. Of course, your project is your project, so you (in consultation with your client) should feel free to depart from the standard method as desired. However, we ask that when you try something new or different, you think of it as an experiment that you can tell us all about. Jot down what you're doing differently and why. What do you hope to accomplish? How did it turn out and why?

Why do we call it the "standard method"? Most top system dynamics practitioners follow processes that are similar to what we do in class. On the other hand, all practitioners have their own modifications. We were in a quandary. If we called this the "Jim Hines Method", everyone would say, "That's not the Jim Hines Method, that's the process that *everyone* follows. *I've* been doing it for years. It's standard!" Of course by calling it the "standard method", everyone will now say, "That's not the standard method, it's just Hines' method. What *I* do is the standard method, and it's *totally* different". We finally decided to go forward with the "standard method", because it seemed less self-aggrandizing than the "Jim Hines method".

Steps in the standard method. The steps of the standard method will probably seem familiar to you after taking after having take *System Dynamics for Business Policy* or *System Dynamics: Managing Complexity* (or, perhaps, a course equivalent to either of these). The steps are:

1) Problem definition

a) List of variables

b) Reference modes

c) Problem statement

2) Momentum policies

3) Dynamic hypotheses (i.e. causal loops)

4) Model first loop

5) Analyze first loop

6) Model second loop

7) Analyze second loop

8) Etc.

Conclusions and insights should emerge at every step and may emerge at any minute during the standard method. Be sure to record these conclusions and insights when they occur.

Quick example of the standard method. In this example, we'll end up building a classic diffusion model. But, let's pretend that we don't know what a diffusion model is. (If you *don't* know what a diffusion model is, this little exercise will show you).

Our first meeting with the client begins in a conference room with the vice president of the automated products division, and his direct reports (marketing, manufacturing, research and development). The VP provides some introductions and context.

"Our Automated Fly Swatter is a great product. But, we need to understand the key drivers in the fly market, so I've hired these very smart folks from MIT. Let me just turn it over to them so they can tell us what those key drivers are."

At this point everyone turns to you and expects you to say something brilliant. That's too hard, so instead you stand up and say "We don't really don't know anything about fly swatters or even much about flies and very little about your culture, your values, the way you do business. One thing I do know, though, is if I were this were *my* problem, I wouldn't turn it over to anyone less than the most knowledgeable people on the planet – and that's you guys. The reason I *think* you probably really need us is not because you know too little about the technology, your own company and the market, but because you know too much. You know thousands of things and thousands of ways that they're all interconnected."

At this point you stop to look meaningfully into the eyes of a few of the managers around the table. "What you probably *need,*" you continue, "is some help in talking about what you know and structuring all that knowledge in a way powerful enough so that you can see what the key things are you really ought to do." You pause again just to make sure that the

reason managers are nodding is that they agree with you and not because they're all about to drift off to sleep.

Once you're reassured you continue, "If that's what you need, then we're in good shape because what we have to offer is exactly that: A structured process for talking and thinking and for arranging what you know in a way that makes it easier to figure out what to do. Fortunately, you don't have to take my word for it. The process contains a number of steps and the first step is easier to do than to talk about. So, what do you say? Should we start?" What can they say, except, "Well...sure, let's just dig in". So, you tell them that you want to begin by simply listing important variables". Slowly at first and then with increasing speed the managers call out variables while you write them on a flip chart. You record:

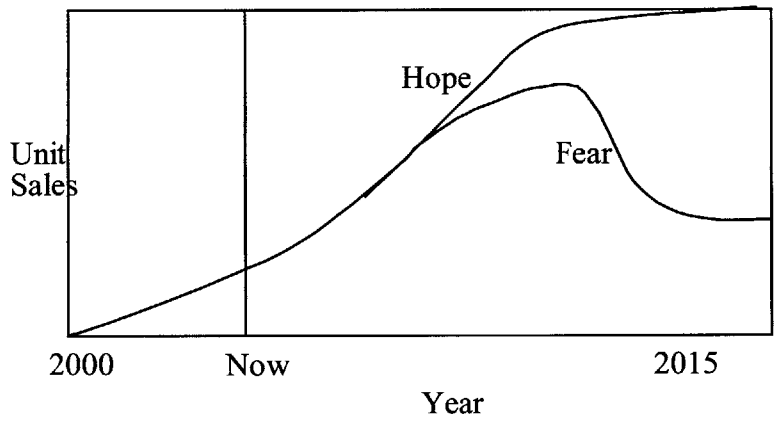
Variables List:

- Fly population
- Revenues
- Unit Sales
- Annoyance at flies
- Market saturation
- Manufacturing costs
- Price
- Cost of batteries
- Word of mouth about our product
- Product recalls

- Health problems with our products
- ...etc.

Eventually, your managers run out of steam. You call a break, and ask that during the break people mark what they think are the five most important variables.

Reference Modes: Returning from the break, you explain that you want to graph the behavior of some of the variables. Identifying the half dozen variables that received the most "votes", you lead the group through a reference mode exercise drawing each one on a flip chart. For example, one of the reference modes might be



(Looking at the graph some one in the group says, "You know, for a long time we won't be able to tell which trajectory we're on". You immediately find a fresh flip chart, title it "Insights" and right that baby down.)

Problem statement: One or more of your reference modes almost certainly will contain the true concern of the clients. You phrase it to the group, but you don't write it down, after all a picture is worth a thousand words. You just point to the curve and say:

We hope that the initial growth trend of AFS sales continues and that the product ultimately becomes a stable, high-volume seller. But we're worried that sales, after appearing to be on track, might take a nosedive leaving us with mediocre or low sales, and way too much capacity. If we are successful in our project here we will increase the likelihood of the curve labeled "hope" and decrease the likelihood of the curve labeled "fear".

Momentum policies. *Momentum policies* (i.e. solutions) are what the client would implement now to solve the problem, if they had no further time to collect information or ponder. Once you have a problem focus, you are in a position to collect momentum policies.

Continuing with our example, you point out to your client that the system dynamics process has already added something by crystallizing the problem. You explain, though, that you would like to be able to gauge at the end of the process, whether anything beyond this additional specificity has come out of the project. Consequently you'd like to record what the client would do *now* about the problem, if decisions had to be made *immediately*.

You record ideas like:

"We need to do a market study"

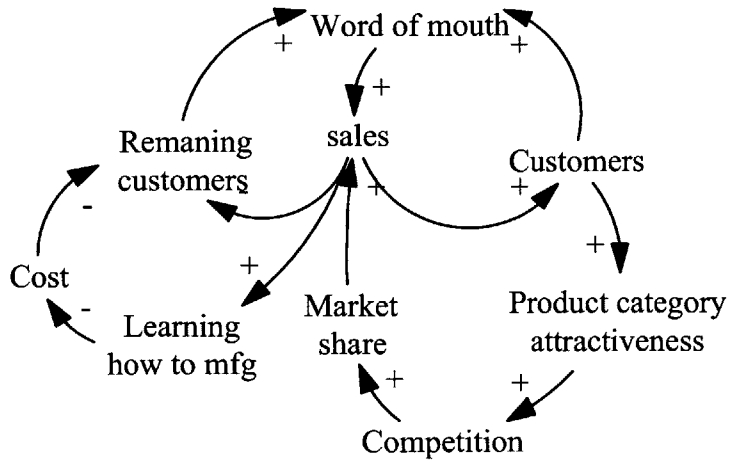
"We should start a competitor intelligence unit"

"We need to get data on the drivers of the market"

"We've got to get better forecasts from the Economics Group".

Note that these policies are not all well thought out, and some are not even policies. No problem, simply record them. Store them away. You might want to use them to suggest tests or directions of inquiry, but at least (and in most cases at most) you will pull them out ten weeks from now to say, "look how far we've come".

Causal loop diagram. With variables, reference modes, and a problem-focus, you will be in position to start coming up with dynamic hypotheses; that is, loops that describe feedback processes capable of generating the patterns in your reference modes. Coming up with a diagram will take several weeks, and will likely result in a number of insights and good ideas.

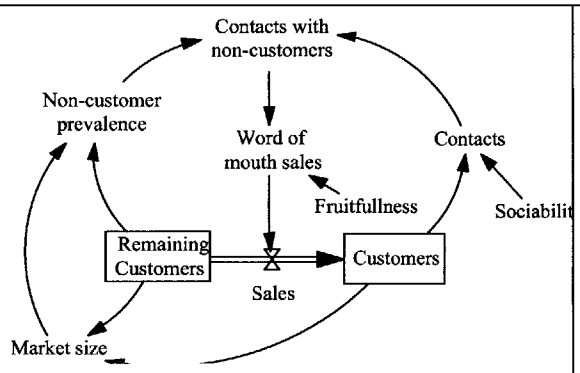


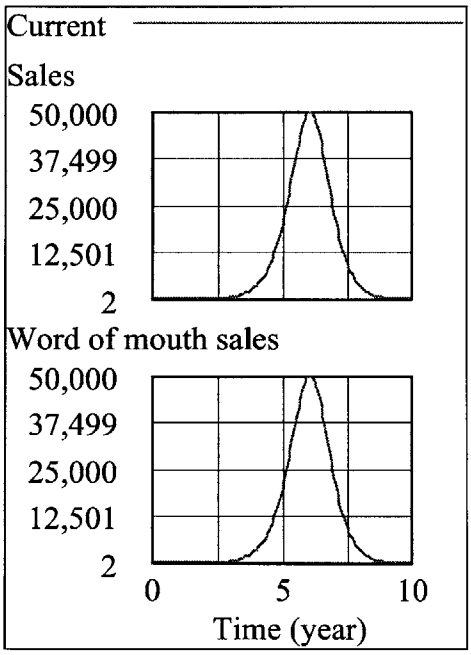
Again remember to record insights as they come up. For example: "The learning loop counteracts the running-out-of customers loop" and "We can strengthen the word-of-mouth loop with a sign-up-a-friend promotion".

Modeling. Finally, at about the mid point in the semester, you will be ready to model. By this time, your clients realize that the model is not the actual objective, rather the process is. The modeling is simply the next step in the process, it may help people refine some of the insights you've already recorded, it will probably result in additional insights, but it probably won't contradict any of the insights you've already had.

Here's what you'll do: You will choose a loop, model it, simulate, analyze, and work with your client to develop insights and ideas. Then you'll choose another loop, add it to your growing model, simulate, analyze again, and work on further developing new or existing ideas.

You will probably only have time to model two or three loops. As always you'll record insights and conclusions as you go along. For example, "Strengthening the positive word-of-mouth loop creates a faster rise and a deeper collapse." and "Replacement sales may lesson the severity of the down-turn in sales".






```
**********************************
  .diffusion
**********************************
Sales = Word of mouth sales
        Units: people/year
Word of mouth sales =
   "Contacts with non-customers" * Fruitfulness
        Units: people/year
Fruitfulness = 0.05
        Units: fraction
"Contacts with non-customers" =
   Contacts * "Non-customer prevalence"
        Units: people/year
Contacts = Customers * Sociability
        Units: people/year
Sociability = 40
        Units: people/(year*person)
Customers = INTEG( Sales , 1)
        Units: people
"Non-customer prevalence" =
   Remaining Customers / Market size
        Units: fraction
Remaining Customers = INTEG( - Sales ,
100000)
```

	Units: people Market size = Customers + Remaining Customers Units: people ********** .Control ********** FINAL TIME = 10 Units: year INITIAL TIME = 0 Units: year SAVEPER = TIME STEP Units: year TIME STEP = 0.0625 Units: year

You may find that the modeling leads to the best insights. Or you may find in retrospect that the causal loops, or even the reference modes, was the source of the most important insights and conclusions. You may find that some people involved in the process liked the modeling best and others liked causal looping or something else best. The important lesson from this is that the model is *not* the goal of the engagement. The goal is to use the entire process to help the client. Modeling is just one piece – in any particular situation it might provide the brightest illumination, but in another situation a different part of the process might turn out to be the real source of light, and in yet another situation, the entire process may shine with a uniform brilliance.

Final presentation. The final presentation is not really part of the standard method. But for completeness, here's a brief description. Your final presentation will summarize your project, stressing what you and/or the client learned in the process and how the project has made a practical difference somewhere. There are many different kinds of things that can be learned from the process and many ways to have made a difference. You will have been preparing for the final presentation throughout the term by keeping track of what you and the client are learning and how that has changed or will change what your and/or the client (may) do.

The final presentations are always wonderful – full of insight, humor, and importance. We'd like you to invite your client to the final presentations (now is not too early). Your client may wonder if she really wants to display the project in public. Reassure your client that you won't present anything that the client considers sensitive. These projects are rich and so there is never any shortage of things to present.

6 REFERENCES

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